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The Antecedents of Consumer Response to Domestic and Foreign Brand Placements

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Abstract

Despite a mixture of domestic and foreign brands being integrated in media content, few studies have explored consumer perceptions toward them. Drawing on a large-scale survey with in-excess of 1700 consumers from the United States and Hong Kong, the findings of this study revealed that consumers who were more ethnocentric felt good when seeing domestic brands placed in local television programs, although they are not against the placement of foreign brands. However, these consumers are less positive toward foreign brand placements only if they favor local production.

Keywords: consumer perception, product placement, domestic brands, foreign brands.

1. Introduction

The popularity of international movies and syndicated television programs have contributed to the internationalization of product placement strategies (Khalbous et al., 2013). Chan and Lowe (2018) analyzed prime time television programs in Hong Kong and found that about one-third of the analyzed programs were syndicated programs (i.e., programs purchased from foreign countries). Chinese brands have also started to appear in Hollywood movies and concurrently many foreign brands have adopted product placement to reach consumers in mainland China. Nevertheless, very few studies have explored consumer perceptions toward domestic and foreign brands placed in media content. Specifically, the study builds on previous research and seeks to address the following research questions: 1) Do consumers exhibit different levels of preferences toward domestic and foreign placed brands? 2) What are the antecedents that explain consumer preferences for the placement of domestic and foreign brands?

2. Literature Review

Previous studies have examined how people from different countries and cultures respond to product placement (Chan, 2012). Despite calls for research to examine potential country of origin bias in the interpretation of local versus foreign brand placement (Gould, Gupta and Grabner-Kräuter, 2000), very few studies have addressed this research gap.

2.1. The Antecedent of Consumer Ethnocentrism

Consumer ethnocentrism is defined as the beliefs held by consumers about the appropriateness and morality of purchasing domestic products and the rejection of foreign-made products (Shimp and Sharma, 1987). Highly ethnocentric consumers tend to have a more favorable perception of domestic products and are less likely to buy products and services from foreign countries in order to support their local economy (Ozsomer, 2012). In extending consumer ethnocentrism within the product placement context, it is reasonable to infer those individuals who support a local economy and prefer local production may also favor seeing local brands in “fictionalized life”. More ethnocentric consumers tend to favor local brands (Steenkamp et al., 2003). It is hypothesized that ethnocentric consumers will favor seeing domestic brand placements and they will be more negative toward foreign brand placements. Therefore, the following hypothesis is offered:

Hypothesis 1: Consumer ethnocentrism has a) a positive influence on the preference for seeing domestic brand placements, while b) a negative influence on the preference for seeing foreign brand placements.

2.2. The Antecedent of Preference for Local Production

Balabanis and Diamantopoulos (2004) proposed that consumer ethnocentrism only forms a baseline for consumption bias and other factors should also be taken into consideration such as consumer preferences for local versus global production. Local products target local markets and are typically distributed only in the home country alone, while global products target global markets and are distributed around the world (Strizhakova, Coulter and Price, 2008). The preferences of local culture and lifestyles were found to associate with advertising and promotion strategies. For example, Zhou and Belk (2004) discovered that some Chinese consumers preferred local models because they reflect Chinese values and demonstrate a sense of national pride. Local brands are perceived as more authentic, down-to-earth and have a closer connection with the local culture (Steenkamp et al., 2003). Consumers that favor local production are expected to prefer seeing domestic brands integrated in local television programs. However, they may be less positive toward foreign products and thus may not like to see foreign brands integrated in domestic television programs. Therefore, it is hypothesized that:

Hypothesis 2: Consumer preference for local production has a) a positive influence on the preference for seeing domestic brand placements, while b) a negative influence on the preference for seeing foreign brand placements.

3. Method and Results

3.1. Method

A web survey was conducted in the U.S. and Hong Kong in which the Internet is widespread. Two versions of the research instrument (i.e., in English and Chinese) were developed through a back-translation process. The variables were inferred from observable responses and all the measurement items were adapted from the previous literature which had been rigorously validated. The questionnaire was piloted, and some wording was further modified to reduce ambiguity. Participants were recruited and invited to respond to the survey via a professional market research agency. The final sample included 1725 respondents with an almost equal distribution of geographic, gender, and age group.

3.2. Results

The results show that consumers who were more ethnocentric believed that local television programs should integrate more domestic brands and they felt good when seeing them (b = 0.46, t = 21.15, p < 0.001). However, they were not against seeing foreign brands appearing in local television programs (b = -0.02, t = -1.03, p > 0.05). Therefore, H1a is strongly supported while H1b is not. We found that consumer ethnocentrism has a negative influence on the preference for seeing foreign brand placements via preference for local production. Consumers who were more ethnocentric also favored more local production (b = 0.29, t = 11.04, p < 0.001) which led to negative feelings of seeing foreign brands appearing in television programs (b = -0.13, t = -6.91, p < 0.001). A significant impact of preference for local production on preference for seeing domestic brand placements was also found (b = 0.16, t = 7.48, p < 0.001). Therefore, both H2a and H2b are strongly supported.

4. Discussion and Conclusion

The results have significant theoretical contributions to the field as cultural factors in the perception of product placements remain an understudied area (Jin et al., 2015; La Ferle and Edwards, 2006). This study extends the current literature by systematically examining the antecedents of consumer perception of domestic and foreign brand placements including consumer ethnocentrism and preference for local production (Mandler et al., 2020). It was found that consumer ethnocentrism has a direct positive influence on the preference for seeing domestic brand placements, as well as an indirect negative influence on the preference for seeing foreign brand placements via the preference for local production. The managerial implications from the results help to simplify marketers' decisions i.e., program producers and brand managers in formulating placement strategies for domestic and foreign brands. It is suggested that marketers could place domestic brands in programs that are more likely to attract ethnocentric consumers. It appears that ethnocentric consumers are not necessarily against foreign brand placements while foreign brands should avoid being placed in programs about local production or coappearing with local products (Chan, 2022). The results also signal several avenues for future research to consider.

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Hong Kong - Chinese Mainland Economic Integration:

An Updated Index (1990-2019) and Analysis

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Hong Kong – Chinese Mainland Economic Integration:

An Updated Index (1990-2019) and Analysis

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Introduction

Hong Kong and mainland China have undergone continuous economic integration over the last four decades. However, a comprehensive and scientific index for measuring the complicated structure of the economic integration between Hong Kong and the mainland does not exist. Drawing from the literature on economic integration, we use archival data from various sources between 1990 and 2019 to construct a comprehensive index of economic integration between Hong Kong and Chinese mainland, consisting of 21 time series data along three dimensions: driving forces, throughput process, and outcome convergence. The findings reveal the positive effect of economic integration as well as deep-rooted problems in the territory and call for policy discourse on effective solutions.

Research Framework

Drawing from the literature and indices of economic integration from other areas of the world (e.g., EU and NAFTA), we consider the unique characteristics of the HK-mainland economic relationship, particularly its high degree of complementarity and asymmetry, in defining and measuring economic integration to assess the extent of such integration and its effect on socio-economic development in Hong Kong. The index includes three dimensions: driving forces, throughput process, and outcome convergence.

Indicators of Economic Integration

Driving Forces

Factors such as tariff rates and non-tariff barriers may impede economic integration. Economic incentives under the CEPA encourage trade and investment. The drivers of integration include the development of institutional arrangements that reduce the transaction costs of cross-border economic activities. They consist of the number of zero tariff codes signed by both parties, obtained from the Hong Kong Trade and Industry department. We also obtain the number of regional offices of mainland firms in Hong Kong. We use the number of border control points, the number of scheduled cross-boundary trains and buses between Hong Kong and the mainland as proxies for the convenience

of transportation. The Hong Kong Immigration and Custom Departments provide information on the control points and the Hong Kong MTR Corporation provides information on the number of scheduled trains between the mainland and Hong Kong. As several cross-border bus companies operate franchise services in Hong Kong (e.g., Eternal East Group and Trans-Island), we include the number of scheduled buses (including coach and shuttle bus) that pass through the control points each day. These data are obtained from the Hong Kong Transport Department.

Throughput Process

The efficient movement of capital, goods and people in the throughput process improves factor allocation. We collect data on the direct investment (both inflow and outflow) between Hong Kong and the mainland in terms of the amount and per cent of external primary income. This measure reflects the repatriation of profits made by foreign firms operating in this area. The major data source is the HKCSD. We also report the net flow of capital (i.e., the difference between the inflow and outflow between Hong Kong and the mainland). Another important transmission channel is the movement of people. We obtain the daily cross-boundary trips between the mainland and Hong Kong. First, we include the number of Hong Kong residents visiting the mainland as reported by the HKCSD. We also include the number of visitors coming from the mainland and the share of spending done by mainland visitors. This information is collected from the Hong Kong Tourism Board.

Outcome Convergence

The effects of the market homogeneity and market symmetry due to economic integration include the synchronisation of economic cycles and the equalisation of consumer prices, wages, interest rates and inflation. First, the economic cycle is measured using GDP, obtained from the World Bank. Second, we measure price levels using the convergence of the Consumer Price Indexes of the Hong Kong (HKCSD) and mainland economies from the World Bank. To identify the convergence of prices and regional GDP per capita, we compute the dispersion using the coefficient of variation (i.e., sigma-convergence). Variables with smaller coefficients of variation are less dispersed than variables with larger coefficients of variation. We collect data on the annual interest rates and inflation rates from the World Bank. We take the absolute differences of the inflation rates and real interest rates between Hong Kong and the mainland and use them as indicators of market homogeneity.

Other outputs of economic integration include indicators of social interactions. Cross-border marriage has become a significant proportion of Hong Kong marriages. The demographic trend in cross-border marriage represents structural changes in families and is a consequence of economic integration. We collect such data from the HKCSD. Another consequence of economic integration is cross-border education. We obtain the data on the number of Hong Kong residents studying in the mainland and the number of mainland residents studying in Hong Kong from the Immigration Department and the Hong Kong Education Bureau.

Method and Results

To measure these indicators, we retrieved the relevant data from various sources, including as the Hong Kong Census and Statistics Department (HKCSD), the National Bureau of Statistics of China, and international organisations such as World Bank. We construct the index using principal component analysis (PCA) to identify how different variables change in relation to one another.

The overall index of economic integration shows a gradual upward trend (Figure 1). After the Basic Law in Hong Kong was ratified, integration remained at a very low level in the early 1990s. It experienced several years of flat growth until 1997. While the index shows a stable ascension starting in 1999, the overall index picked up speed in 2003, when the first CEPA was signed and the Individual Travel Scheme was introduced. After that, the level of economic integration continued to grow steadily. Starting in 2013, Hong Kong was positioned as a connecting hub in the mainland's Belt and Road Initiative. The lack of growth during the financial crises of 1994, 1997 and 2008 is also evident. In general, the level of economic integration reached a remarkably high level by the end of the study period, with the components in the three sub-indices explaining 95% of the variance.

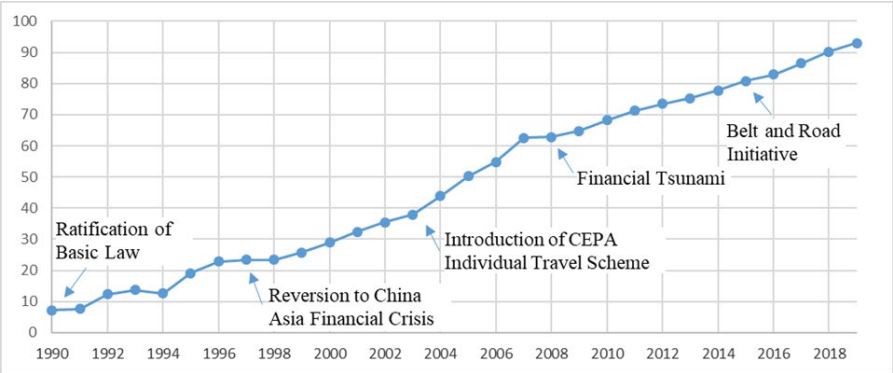

Figure 11. The Overall Index (1990 – 2019)

Cointegration Analyses

To examine the long-term relationships between the integration index and key socio-economic indicators, we use the VECM to correct the disequilibrium in the cointegration relationships. According to Table 1, the index is positively related to most of the indicators at significance levels of 1%, with the exception of the ethnic identity as a Hongkonger (marginally significant at the 10% level) and happiness index (insignificant). In particular, the integration index is positively associated with GDP growth and GDP per capita. This suggests that economic integration is an important contributor to the territory's economic development (Table 1). The positive relationship between integration and unemployment also reflects the same pattern in the early period. In the later period, unemployment gradually decreased as Hong Kong transformed itself to a service economy.

The association between property prices and the economic index reveals a positive relationship (Table 1). As money flows from the mainland to Hong Kong, more venture capitalists diversify their investments by investing in property (both private and commercial property). Aside from the limited supply of land for housing construction, the influx of capital leads to an increase in the prices of residential property and a basket of consumer goods and services after 2000. In fact, property prices in Hong Kong are among the highest in the world and nearly 20 times the average income in Hong Kong, thus making a home in Hong Kong the least affordable for its people (Demographia 2022). Many consider the exorbitant cost of housing in Hong Kong a major underlying cause of its social ills. As for bilateral price equalisation, the negative relationship between the integration index and the coefficient of price variation (i.e., sigma-convergence) shows a higher level of price convergence between the two economies.

The results also show that increasing economic integration corresponds with greater income inequality and the widening gap between the rich and the poor. Hong Kong's Gini coefficient has remained higher than 0.50 since 2007, making it one of the worst in the world, especially among the developed economies. Although the Hong Kong economy has grown at a respectable rate (i.e., 6% per annum in normal times), the real income of average people has not grown at the same pace. Government statistics show that poverty rate in the territory reached a new high in 2019 and put 1.6 million people, 20.4% of the population, under the official poverty line (Hong Kong Business 2019).

Table 1. Results of Long-run Equilibrium Relationships

Variables	Coefficient of cointegration	t-statistics
GDP	3.94E-05***	4.61
GDP Per capita	3.44E-04***	4.94
Unemployment rate	0.885***	4.45
Property price (private domestic)	0.548***	3.57
Property price (private office)	0.125**	2.52
Gini coefficient	1677.68***	18.52
Consumer Price Index (Hong Kong)	0.145***	3.69
Bilateral price variation (sigma-convergence)	-297.03***	-3.18
Satisfaction with the government	14.729***	4.82
Confidence in HK's future	30.084**	2.13
Ethnic identity as Hongkonger	2.659*	1.70
Happiness index	-0.181	-0.73

Note: level of significance: *** $p \leq 0.01$, ** $p \leq 0.05$, * $p \leq 0.10$

The results also indicated that Hong Kong people were mildly satisfied with the government and perceived the future to be brighter during the early years. Although economic integration is positively related to confidence in Hong Kong's future (Table 4), such confidence has sharply deteriorated. Not surprisingly, economic integration does not have a significant impact on the happiness of Hong Kong people (Table 4). From 2000 to 2008, ethnic identity as a Hongkonger in comparison to that as Chinese was in a downward trend. However, ethnic identity as a Hongkonger has increased since 2008. Thus, continuous integration also promotes a sense of uniqueness among the Hong Kong people. As cross-border travel and communication become more frequent, Hong Kong citizens become more aware of their own identity and developed a stronger sense of uniqueness, especially among the youth (Hong Kong Institute of Asia Pacific Studies 2016).

Discussion

The results suggest that the level of economic integration between Hong Kong and the mainland grew steadily from 1996 to a remarkably high level in 2019. The only exceptions occurred during the Asian Financial Crisis in 1997 and the Financial Tsunami in 2008. Cointegration analyses indicate that the level of economic integration is associated the continuous economic development of Hong Kong, as reflected in its increasing GDP and GDP per capita over time. Although the unemployment rate increased to its highest level in the early 2000s, it has been on a downward trend in recent years. While consumer price index (i.e., inflation) has remained low since 2000, bilateral price variations significantly decreased over time. Thus, the results indicate an overall positive long-term relationship between the integration index and economic development of Hong Kong.

Cointegration analyses show the non-monotonic trends in the relationships between economic integration and other socio-economic indicators. The level of economic integration is associated with surging real estate prices for both residential and commercial properties. Meanwhile, continuous economic integration coincides with increasing economic disparity in the territory, as indicated by the Gini coefficient, one of the highest in the world. Despite their overall positive relationships with the integration index, other indicators exhibit significant variations over time. While satisfaction with the government and confidence in Hong Kong's future peaked in 2007, both have since decreased. A surge in ethnic identity as Hongkongers since 2007 is also notable among Hong Kong residents. Interestingly, continuous economic integration has little association with residents' level of happiness, which shows a slight downward trend.

Overall, these findings provide evidence of the complex relationships between economic integration and other socio-economic indicators as well as public sentiment towards the government and society. While these relationships have been the topics of heated debate, whether economic integration can lead to social cohesion and long-term stability remains unclear (Puig and Chan 2016). Policymakers and researchers may consider these findings in their deliberations when analysing and devising public policies.

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The Impact of Institutional Shareholder Ownership on Invested Firms' Strategies

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The Impact of Institutional Shareholder Ownership on Invested Firms' Strategies

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Abstract: Studying the relationship between institutional investors and their investment has been a hot spot in research field. Since we are curious about how institutional investors get benefits from invested companies and vice versa, we try to evaluate and predict the value of an investment to counter parties through their investment and operation mode. To be more specific, we decided to explore the relationship between dynamic institutional investor ownership and the risk-taking strategy of invested companies by utilizing big data and computer technology. We use crawler technology to gain data of all the listed companies in China over the past 10 years and use regression analysis to get our result. We apply Miles and Snow's model as our technology to derive the result of strategy aggression. Our finding indicates that a higher increase of institutional shareholding will lead to a more aggressive company strategy. Moreover, we classify institutional investors into different investment styles according to risk preference and our additional analysis shows that there is a significantly positive relationship between high-risk investor ownership and firm strategic aggression. The heterogeneous test indicates that fierce market competition will enhance such association and the existence of discretionary accrual will weaken the positive relationship. Finally, our results survive a number of robustness tests and endogenous tests.

Keywords: Institutional Ownership, Risk-taking Strategy

I. Introduction

A. A. Statement of Problems

Ownership structure has been attractive in academia in recent years and numerous researches have explored the relationship between institutional investors and their invested firms' behaviors. For example, Hadani *et al* (2011) focuses on the relationship between shareholder ownership and company earnings (Hadani *et al*, 2011). Meanwhile, Andrew, Udomsak, and Ben (2016) investigate the impact of shareholder activity on information flow, and Emmanuel, Kenneth, and Olufemi (2011) discuss the relationship between shareholder ownership and politics. More investors start to use smart technology like blockchain to facilitate their investment decisions, therefore applying advanced models and methods to choose better invested companies and to make wiser investment choices. Many companies apply dynamic modelling to derive good company strategies in the competitive market. Among these studies, how institutional investors' activities affect firm strategies are significantly prominent (Smith, 1996; Carleton et al. 1998). However, there is still not enough research and evidence to identify the association between institutional investor ownership and company risk-taking strategies.

Therefore, our study targets company risk-taking strategies and tries to explore how institutional investors affect invested companies' corporate governance, explicitly, the influence of institutional investors on the company's development strategy in future years when participating in corporate governance. We classify institutional shareholders into several types and find how their characteristics affect company strategy. What makes our paper different is that we are going to investigate the impact of dynamic ownership. We will find out how institutional shareholder ownership change influences the invested company strategy in the following year. We believe that compared with the individual shareholders, institutional shareholders can know more information about their target company. Their actions are relatively easier to find and define as a pattern.

Using Miles and Snow's model to construct a discrete variable for strategy and measure this variable from six different dimensions, our study shows a positive relationship between institutional ownership (high-risk investors) and strategic aggression. The further heterogeneous test indicates that fierce market competition will enhance such positive association, but the corporate earnings management efforts will weaken the positive relationship. Finally, our results are shown to survive the robustness and endogenous tests.

The contribution and long-term significance of our research in the academic field are as follows. We try to investigate shareholder ownership in a different dimension---whether the institutional shareholder with the bigger change in the shareholding ratio will have a stronger interest, and whether high-risk institutional shareholders will lead to a more aggressive strategy, which complements the existing study where researchers mainly focus on how institutional shareholders affect invested companies (Hadani et al, 2011) and what shareholder ownership is for institutional shareholders (Smith, 1996).

Compare with the static one, our paper demonstrates how company strategy is affected more directly. Also, we provide research basis and assistance for future research on the in-depth links between institutional investors and invested companies, such as how institutional investors influence company management (Gillan & Starks, 2000). This may give people an extra angle to explore shareholder ownership.

Our research article is divided into the following sections. Section 1 will be a literature review followed by section 2 which will be our hypothesis. Our methodology will be put in Section 3 while Section 4 will present our research result including regression analysis, robustness test, and endogenous test.

B. Literature Review

1). Shareholder Ownership.

Shareholder ownership is associated with the willingness to involve corporate change and management's decisions (Filatotchev & Dotsenko, 2015). Compared with individual investors, normally institutional investors have lots of advantages, which are reflected in shareholding ratio, information acquisition, professional knowledge, rich related experience, and so on (García-Meca et al., 2015). Institutional investors are usually more rational than individual investors (Verma & Verma, 2008). Rational investors, such as institutional investors, have a greater incentive to arbitrage and make investments that have a higher risk (Verma & Soydemir, 2009). They can help the invested company achieve better performance or gain more earnings in the future, to achieve the goal of maximizing the investment profits. Simultaneously, it is relatively easier to find and explore the investing pattern of institutional investors since their investing action and style are normally obvious and the actions of individual investors are almost random and varied. Moreover, institutional investors will have a greater impact on the macroeconomic market, and they may change the market size, market micro-structure, and market innovation level. Relevant regulatory apartments and policymakers also need to pay close attention to the institutional investors' activities. At this time, exploring the behavioral model of institutional investors can not only help government departments better supervise and restrict the activities of institutional investors but also explore the development process, change, and some interesting fluctuations of the market (Davis & Steil, 2004).

In research from Smith (1996), he suggests that the governance effect of institutional investors is mainly reflected in the impact on the various important decisions and consequences of the company. Most researchers consider different types of institutional investors as a whole in their studies; however, different types of institutional investors have different investing styles and characteristics, so they play very different roles in influencing corporate governance. The behavior in which the institutional shareholders try to increase monitoring activities and participate in corporate governance is described as "shareholder ownership". Michael (2011) proposes that shareholder ownership is the activity that the shareholder takes, including monitoring and controlling the organization structure which cannot bring maximum profit to the shareholders. These activities can be shown in different ways, like proxy proposals sponsored by shareholders (Hadani, Goranova & Khan, 2011) or increasing the shareholding ratio.

2). Corporate strategy.

Nowadays, new fin-tech technology becomes a good tool for company managers to make corporate decisions, especially in investment field. For example, . The fin-tech technology can help them find more suitable and favorable investment decision based on the specifically prepared time series since financial data are abstract multidimensional and multivariate for most people.(Antoni & Boris, 2017) Antoni and Boris (2017), utilize visualization technology and the Collocated Paired Coordinates approach to find efficient investment strategies. Some researchers apply the Naïve Bayesian machine learning algorithm to calculate and predict company’s future performance so that they can find company with better future and prospect(LI, 2010)

To learn more about corporate strategy, we find that strategy can be divided into different types based on different measures. For the strategy style, Miles and Snow (1978) divide strategies into offensive, defensive and analytical types, ranging from radical to conservative styles. Porter (1980) divides it into differentiation and cost leadership strategies. Treacy and Wiersema (1993) divide strategy into three types: cost leadership, efficient operation, and intimate client. Although they use different criteria to categorize strategy, these types have something in common and even overlap with each other. For example, the offensive strategy of Miles and Snow is equivalent to the differentiation strategy of Porter.

The integration of those strategies is decisive to a firm’s performance and corporate governance. Not only because of what resources shareholders capture, but also because of how they want to empower invested firms (Goranova & Ryan, 2014). Since

these institutional shareholders have a higher share in the company they have higher incentives and care more about management problems, such as agency problems arising from managers paying more attention to their interests instead of shareholders'. In this case, they intervene and influence corporate companies' strategy by using their voting power, and industry resources to facilitate companies' development to minimize this kind of risk. So, establishing the connection between their resources and invested firms' strategies may find some rules.

A strategy is never a once-and-for-all event, it goes on and on. Therefore, the company always needs to continually review and revise strategic objection due to the changing environment (Black, 1998). To make the strategy change compatible with the change of the biggest institutional shareholders who own a high proportion of shares, we explore the relationship between the variation of the biggest institution shareholders and company strategy over a certain period.

3). Relationship between Shareholder ownership and strategy

According to research, the degree of control can be determined by the shareholding size distribution (Cubbin & Leech, 1983). To a certain extent, the shareholding ratio of institutional investors has an impact on their willingness to be involved in corporate governance and their ability to participate in corporate governance. If they hold a higher shareholding ratio, they will have stronger willingness and ability (Black, 1997). Grinstein and Michaely (2005) have proposed that the relationship between the involving cost and payoff decides whether the shareholder will participate in corporate governance. Because larger shareholders with a higher shareholding ratio, have more advantages such as professional knowledge, capital, and more information (Shleifer & Robert, 1986) when participating in corporate governance, they have increased motivation. Under these circumstances, the benefits they get can be greater than the cost of taking action, and having higher shareholding also means they have more and stronger power to push their ideas into implementation (Parrino et al, 2003; Shleifer & Robert, 1986).

Also, the different shareholding structures will bring different energy and incentive to corporate strategies (Zhao et al., 2020). So the change in shareholding ratio and dynamic shareholding structure can be considered the factor of shareholder ownership and have different influences on the strategic actions of invested companies.

The effective supervision hypothesis believes that institutional investors have natural advantages and can play their role of advice and supervision. Institutional investors can participate in corporate governance through the "three meetings": shareholders' meeting, board of directors, and board of supervisors. For example, participating in planning and formulating company strategy by submitting proposals at the general meeting of shareholders. According to the effective governance hypothesis, these active governance actions of institutional investors will have an impact on the company's management, earnings management, R&D expenditure, and other aspects, thereby affecting the company's strategic style (Xiong, 2016).

Empirical research based on data of from different investors and listed companies shows that hedge funds generally pay more attention to the short-term performance indicators of listed companies while other types of investors such as pension funds pay more attention to the long-term performance of invested companies. So they may participate less effectively than active hedge funds in the process of corporate governance and company strategy. (Brenner, 2008). Also, research showed that active shareholders like corporate shareholder ownership make companies' strategies more complex and intense (DesJardine et al., 2021).

So we assume that different types of investors have different levels of influence on the strategy of the invested company and more active institutional investors will put more pressure and pay more attention to the company's strategies, which may lead to more aggressive and intense company strategies.

H1: Shareholder ownership has a positive impact on the aggressiveness of strategy. The higher shareholding, the more aggressive strategy the company will take.

H2: Shareholder ownership of high-risk institutional investors has a positive impact on the aggressiveness of strategy. The higher shareholding of high-risk preferences that investors have, the more aggressive the strategy the company will take.

4). Effect of a control variable on the relationship between shareholder ownership and strategy

① "Big 4" Auditing Firms

According to Wahab et al. (2007), higher-quality auditors are more likely to ensure greater transparency and eliminate mistakes in financial statements so that they can draw more solid conclusions. Also, abnormal cash flow has a positive association with hiring "Big 4" auditing firms or not, which means Big 4 auditing firms may influence the financial situation and company strategy accordingly (RAHMAN et al., 2016). So, we select the Big 4 as one of our control variables.

H3: The existence of Big 4 auditing will strengthen the relationship between shareholder ownership and strategy aggressiveness.

② Discretionary accrual

In research from Emamgholipour (2013), the result shows that discretionary accruals can be used as an indicator for earnings management and that it has a positive relationship with shareholder ownership. Another research states that firms targeted by shareholder ownership tend to have higher discretionary accrual in their reported earnings which means there is a relationship between discretionary accrual and shareholder ownership (Sun et al., 2013). To exclude its influence and residual on the relationship between shareholder ownership and company strategies, we treat discretionary accrual as a control variable.

H4: The existence of discretionary accrual will weaken the relationship between shareholder ownership and strategy aggressiveness.

③Market competition

As market competition has a big influence on a company's strategies. In the past, researchers (Bauer et al., 2010) normally hypothesize a lack of industry competition when considering the influence of shareholder ownership on management strategy. This shows that market competition will influence the relationship between shareholder ownership and strategy to some extent. Besides, according to research (Laksmana & Yang, 2015), market competition will influence company investment strategy which will affect dynamic shareholder ownership accordingly.

H5: Fierce market competition will strengthen the relationship between shareholder ownership and strategy aggressiveness.

2. Methodology

A. Data Source

We use crawler technology to collect all of the firm data we need. Do we identify shareholder ownership based on data from 2009 to 2019 by using the top ten shareholders of all the listed companies? Following Filatotchev and Dotsenko's (2015) research, we know that institutional shareholders have more resources and higher motivation to intervene in invested company's strategy, so we only target firms with institutional shareholders as the top ten shareholders.

B. Research Model

We are going to use two linear regression models in this research. The first regression model is to explore the relationship between the level and intensity of shareholder ownership and the aggressive level of corporate strategy. Our hypothesis is also tested by the first linear regression.

Linear regression model:

$$S = \beta_0 + \beta_1 Activism + \beta_2 Control_{it} + \mu_i + \eta_t + \delta_{it} \quad (1)$$

The independent variable is interest (shareholder ownership) which has two ways of estimation. The first one is to use the change of the shareholding of the institutional shareholder. The second one is to use the change of the shareholding of the "high-risk" type of institutional investors. To control heterogeneity of potential firm and time fixed effects, we include μ and η, while μ represents the firm fix effect and η represents the year fixed effect. S (Strategy) is a dependent variable which is a categorical variable. For the quantitative part of the strategy, we decide to refer to Bentley, Omer, and Sharp (2013). They use the Miles and Snow's model to divide the company strategy into three types: aggressive, moderate, and conservative. We will construct a discrete variable to measure company strategy, which is determined from the following six aspects:

R&D expenditure as a percentage of sales revenue,

Ratio of the number of employees to sales revenue,

Historical growth rate of sales revenue,

Percentage of sales and management expenses in sales revenue,

Volatility of the number of employees,

Percentage of fixed assets in total assets.

After sorting each proportion of all companies in order of size; the top 20% will get 5 points; the last 20% will get 1 point, and so on. Then add up the scores of each proportion of each company, that is, the company's strategy score (maximum 30, minimum 6). According to the size of the final score, the type of strategy of each company in the year can be obtained (from high to low, from aggressive to conservative).

The second linear regression is to explore whether the association between shareholder ownership and the different types of

institutional shareholders affect the aggressive level of corporate strategy.

We use two ways to quantify the shareholder ownership, which are shown in Table 1:

a. The institution_own represents the changes in the sum of the institutional investors for each company.

b. The institution_own_risky represents the changes in the sum of the high-risk preference institutional investors for each company.

C. Control Variables

As shown in the following Table, our control variables include company age, ROA ratio (return on asset), leverage, etc. (Bentley et al, 2013). To control for company and year fixed effects in our panel data, we include company stock code and accounting year indicators; robustness standard error is clustered at the company level.

Control Variables	Description
In(Assets)	Natural logarithm of total assets.
ROA	Return of assets equals profit before interest and tax divided by total assets
BTM	The book-to-market ratio equals the total common equity outstanding divided by the market capitalization at the end of the fiscal year.
Sales Growth	Percentage change in sales from the last year to the current year.
M&A	A dummy variable, which will equal 1 if a merge or acquisition activity occurred in the past 5 years and will equal 0 otherwise.
Leverage	Financial leverage that equals total debt divided by total assets.
Financing	Used to measure of firm’s desire for financing.
Firm Age	Natural logarithm of company age.
Herfindahl Index	Index that is used to measure industry concentration
BIGN	Will equal 1 if it uses a "Big 4" audit firm as its auditor and 0 otherwise.
ABS DisAcc	Discretionary accruals, usually include administrative expenses, asset impairment, and other related accounting items that are manually adjusted.

3. Results

A. Descriptive Statistics

Table 1 Results of descriptive statistics

Variable	Obs	Mean	Std.Dev.	Min	Max
strategy	15,345	**16.920**	3.829	5	29
Lstrategy	15,333	16.480	3.913	0	1
Dstrategy	15,345	0.120	0.324	0	1
Pstrategy	15,345	0.024	0.153	0	1
institution_own	15,122	**-0.396**	6.939	-89.07	82.55
institution_own_risky	15,345	**-0.662**	5.863	-65.16	64.62
BTM	15,345	0.645	0.249	0.011	1.442
ROATTM	15,345	0.053	0.045	-0.012	0.547
Leverage	15,345	1.448	1.542	-3.829	79.04
salesgrowth	15,345	10.19	1093	-0.953	134607
Big4	15,345	0.074	0.262	0	1
herfindahl	15,345	0.155	0.125	0.001	0.799
ABS DisAcc	15,345	0.075	0.142	0	6.224
age	15,345	2.864	0.351	1.099	3.555
MA	15,345	0.768	0.422	0	1
InTA	15,345	22.450	1.347	17.760	28.640
L1	15,345	0.735	0.441	0	1
Financing	15,345	0.857	0.350	0	1

According to Table 1, there are 15,345 valid observations in our model, and the mean of institution_own and institution_own_risky are -0.396 and -0.662 respectively. Their range is from -89.07 to 82.55 and -65.16 to 64.62. The standard deviation of institution_own is 6.939 while institution_own h_s' is 5.863. The dependent variable strategy has an average grade of 16.92, ranging from 5 to 29. Its standard deviation is 3.829.

B. Correlation test

Table 2 Results of correlation test	institution_own	institution_own h_	strategy	BTM	InTA	ROATTM	Leverage
institution_own	1						
institution_own_Risky	0.500***	1					
strategy	-0.025***	-0.083***	1				
BTM	0.039***	0.072***	-0.119***	1			
InTA	0.030***	-0.015**	0.003	0.590***	1		
ROATTM	0.014**	0.038***	-0.037***	-0.006	0.030***	1	
Leverage	-0.002	-0.011*	0	0.014**	0.012**	-0.014**	1

salesgrowth	0.028***	0.024***	0.010*	0.004	-0.002	0.001	0
Big4	0.027***	0.026***	0.016**	0.159***	0.374***	0.002	0.011*
herfindahl	0.043***	0.064***	-0.090***	0.149***	0.198***	0.121***	-0.011
ABS DisAcc	0.075***	0.077***	-0.038***	-0.061***	-0.037***	-0.045***	-0.005
financing	-0.047***	-0.137***	0.229***	-0.082***	0.147***	-0.081***	0.023***
age	0.016**	0.018***	-0.004	0.080***	0.189***	-0.124***	0.060***
MA	-0.067***	-0.170***	0.193***	-0.061***	0.078***	-0.063***	0.017***

	salesgrowth	Big4	herfindahl 1	ABS DisAcc	financing	age	MA
salesgrowth	1						
Big4	-0.002	1					
herfindahl	0.006	0.163***	1				
ABS DisAcc	0.047***	-0.024***	-0.025***	1			
financing	-0.011*	0.024***	-0.103***	-0.015**	1		
age	0.005	0.023***	-0.130***	-0.009	0.280***	1	
MA	0.003	-0.027**	-0.102**	0.034**	0.529**	0.079**	1

It shows that the maximum correlation coefficient between the control variables is only 0.280, which indicates that there is no serious collinearity problem between the control variables.

C. Regression Analysis

1). Main regression result--- the single independent variable

Table 3 Results of main regression test	(1) strategy	(2) strategy
institution_own	**0.0097*****	
	(0.003)	
institution_own_Risky		**0.0129*****
		(0.003)
BTM	0.053	0.058
	(0.211)	(0.213)
InTA	0.402***	0.420***
	(0.119)	(0.118)
ROATTM	-2.423**	-2.177**
	(0.900)	(0.903)
Leverage	0.013	0.017
	(0.015)	(0.016)
salesgrowth	0.001%***	0.001%***
	(0.000)	(0.000)
Big4	0.074	0.093
	(0.294)	(0.296)
herfindahl	-0.714	-0.836
	(0.640)	(0.641)
ABS_DisAcc	0.310**	0.240
	(0.145)	(0.154)
financing	0.362***	0.390***

	(0.080)	(0.079)
age	0.871*	0.790*
	(0.456)	(0.452)
MA	0.100**	0.103**
	(0.043)	(0.043)
Code &Year fixed effect	YES	YES
N	15109.000	15345.000
r2	0.801	0.800
ar2		

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.001$
**we control company stock code and accounting year fixed effect and cluster by company stock code.*

Model 1

$$S = \beta_0 + \beta_1 Activism + \beta_2 Control_{it} + \mu_{it} + \eta_t + \delta_{it} \quad (1)$$

①To test the influence of shareholder ownership (institution_own) on strategy aggressiveness, column (1) of Table 3 shows that the changes in the sum of the institutional investors for each company have a positive effect on the aggressiveness of the strategy. 1% increase of institution_own will cause 0.97% increase in strategy aggressiveness. This indicates the higher shareholding and more aggressive strategy the company is taking in the current year. Our assumption 1 is supported by this regression outcome.

②To test the influence of institutional ownership (institution_own_risky) on strategy aggressiveness, column (2) of Table 3 shows that the changes in the sum of the high-risk preference of institutional investors for each company have a positive effect on the aggressiveness of the strategy. 1% increase of institution_own_risky will cause 1.29% increase in strategy aggressiveness. This indicates the higher shareholding that high-risk preference investors have, the more aggressive strategy the company is taking in the current year. Our assumption 2 is supported by this regression outcome.

2). Regression analysis-interaction item analysis

Table 4 Results of interaction item regression test	(1) strategy	(2) strategy	(3) strategy	(4) strategy	(5) strategy
institution_own		-0.003		0.013***	
		(0.004)		(0.003)	
institution_own_risky	0.011***		-0.002		0.015***
	(0.003)		(0.005)		(0.003)
institution_own_risky *big4	**0.033****				
	(0.014)				
institution_own*herfindahl		**0.084****			
		(0.023)			
institution_own_risky *herfindahl			**0.094****		
			(0.023)		
institution_own*ABS_DisAcc				**-0.026****	
				(0.011)	
institution_own_risky_*ABS_DisAcc					**-0.014***
					(0.008)
BTM	0.059	0.060	0.072	0.062	0.062
	(0.213)	(0.210)	(0.212)	(0.210)	(0.212)
InTA	0.418***	0.390**	0.406***	0.407***	0.422***
	(0.118)	(0.119)	(0.118)	(0.117)	(0.117)
ROATTM	-2.174**	-2.564**	-2.298**	-2.413**	-2.176**
	(0.902)	(0.906)	(0.904)	(0.896)	(0.901)
Leverage	0.017	0.013	0.016	0.013	0.017
	(0.016)	(0.015)	(0.016)	(0.015)	(0.016)
salesgrowth	0.001%***	0.001%***	0.001%***	0.002%***	0.001%***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Big4	0.060	0.063	0.079	0.067	0.089
	(0.295)	(0.292)	(0.294)	(0.291)	(0.294)
herfindahl_1	-0.860	-0.976	-1.074*	-0.721	-0.841
	(0.639)	(0.633)	(0.638)	(0.638)	(0.640)
ABS_DisAcc	0.245	0.295**	0.237	0.393**	0.306*
	(0.154)	(0.147)	(0.156)	(0.140)	(0.157)
financing	0.394***	0.377***	0.400***	0.356***	0.387***
	(0.079)	(0.080)	(0.078)	(0.080)	(0.079)
age	0.803*	0.813*	0.743*	0.875*	0.794*
	(0.452)	(0.454)	(0.450)	(0.455)	(0.452)
MA	0.100**	0.098**	0.100**	0.099**	0.102**
	(0.043)	(0.043)	(0.042)	(0.043)	(0.043)
Code &Year fixed effect	YES	YES	YES	YES	YES
N	15345.000	15109.000	15345.000	15109.000	15345.000
r2	0.800	0.801	0.801	0.801	0.800
ar2					

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.001$
**we control company stock code and accounting year fixed effect and standard error is clustered by company stock code.*

Since institution_own and institution_own_risky have a positive relationship with the aggressiveness of strategy, so we consider this result when we conclude the result of the interaction item.

① big4*institution_own

According to column (1) of Table 3, we find if a company uses a “Big 4” auditing firm as their external auditor, they may use a more aggressive strategy. Assumption 3 is supported by this result.

② herfindahl*institution_own

According to column (2) of Table 3, we find that market competition (herfindahl) strengthens the positive relationship between institution_own and strategy aggressiveness. Hence, it means that more competition makes the relationship that the change of the sum of the institutional investors for each company has a positive effect on the aggressiveness of the strategy stronger. Assumption 3 is supported by this regression outcome.

③ herfindahl*institution_own_risky

According to column (3) of table 3, we find that market competition (herfindahl) strengthens the positive relationship between institution_own_risky strategy aggressiveness. Hence, it means that more competition makes the relationship that the changes in the sum of the high-risk preference institutional investors for each company have a positive effect on the aggressiveness of the strategy stronger. Assumption 4 is supported by this regression outcome.

④ ABS_DisAcc*institution_own

According to column (4) of Table 3, we find that this interaction item (ABS_DisAcc*institution_own) weakens the positive relationship between institution_own and strategy aggressiveness. Hence, it means that the existence of discretionary accrual makes the relationship that the changes of the sum of the high-risk preference institutional investors for each company have a positive effect on the aggressiveness of the strategy weaker. Assumption 5 is supported by this regression outcome.

⑤ ABS_DisAcc*institution_ownz_risky

According to column (5) of Table 3, we find that this interaction item weakens the positive relationship between institution_own_risky and strategy aggressiveness. Hence, it means that the existence of discretionary accrual makes the relationship that the changes of the sum of the high-risk preference institutional investors for each company have a positive effect on the aggressiveness of the strategy weaker. Assumption 5 is supported by this regression outcome.

3). Robustness Test

Table 5 Results of robustness test	(3) Lstrategy	(4) Pstrategy
institution_own	**0.009****	
	(0.003)	
institution_own h_		**0.001****
		(0.000)
BTM	-0.182	-0.016
	(0.218)	(0.013)
InTA	0.436***	0.034***
	(0.110)	(0.006)
ROATTM	-1.313	-0.122**
	(0.867)	(0.058)
Leverage	0.037**	-0.001
	(0.018)	(0.001)
salesgrowth	-0.000***	-0.000
	(0.000)	(0.000)
Big4	0.120	-0.004
	(0.251)	(0.011)
herfindahl_1	-1.356**	-0.069*
	(0.595)	(0.037)
ABS_DisAcc	0.177	0.003
	(0.168)	(0.011)
financing	0.935***	-0.007
	(0.082)	(0.005)

age	2.417***	0.042
	(0.479)	(0.027)
MA	-0.000	-0.001
	(0.048)	(0.002)
Code &Year fixed effect	YES	YES
N	15101.000	15345.000
r2	0.789	0.473
ar2		

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.001$

Then, we use the strategy score with a one-year lag (Lstrategy) and the company that has a strategy score larger than 25 which means aggressive to do the robustness test. We use these two indicators instead of DV to conduct repeated experiments to observe whether the empirical results change with changing parameter settings.

According to column (3) of Table 5, we can know that after changing DV into Lstrategy which is the strategy for the following year, the relationship between institution_own and Lstrategy is still positive, which means it satisfies the robustness test at a 0.1 significance level.

According to column (4) of Table 5, we can know that after changing DV into Pstrategy which is an aggressive strategy, the relationship between institution_own_risky and Lstrategy is still positive, which means it satisfies the robustness test at a 0.1 significance level.

4). Endogenous test

Table 6 Results of endogenous test	(1)	(2)
	strategy	strategy
institution_own	1.661**	
	(0.600)	
institution_own h_		2.718**
		(1.308)
BTM	-3.207***	-6.351**
	(0.636)	(2.0126)
InTA	0.024	0.0996
	(0.199)	(0.2326)
ROATTM	-0.683	-5.6711
	(4.292)	(7.7600)
Leverage	-0.028	0.0028
	(0.076)	(0.1013)
salesgrowth	-0.030	-0.030
	%*	%*
	(0.000)	(0.000)
Big4	-0.293	-0.178
	(0.454)	(0.597)
herfindahl	-7.741***	-12.336**
	(1.668)	(4.235)
ABS_DisAcc	-6.364***	-10.285**
	(1.878)	(4.292)
financing	0.686**	0.657
	(0.336)	(0.443)
age	-3.606**	-7.745**
	(1.112)	(3.429)
MA	1.115***	2.306**

	(0.329)	(0.915)
_cons	29.640***	43.177**
	(7.839)	(16.662)
N	13252.000	13436.000
r2	.	.
ar2		

When considering the relationship between independent and dependent variables, we consider that the relationship between strategy and shareholder ownership is not purely a direct influence on each other, but is influenced by many other factors. Even though we have selected 11 factors that we believe will have an impact on strategy as control variables, we believe that there may still be endogeneity problems due to omitted variables. At the same time, we believe that strategic and shareholder ownership can also lead to mutually causal problems. Because aggressive institutional investors may cause the companies they invest in to have aggressive strategies, at the same time companies with more aggressive strategies may also be more likely to attract aggressive institutional investors. So we decide to use the instrumental variable method to test and solve the problems caused by endogeneity. According to Jiang, Zheng, and Wang (2021), Fu and Qin (2021), and Li and Selvam (2021), we decide to use "whether the listed company is in the CSI 300" as an instrumental variable. Table 6 shows the regression results of the test after considering the possible endogeneity problems between the independent variable and dependent variable. The coefficient of institution_own and institution_own_risky in the above two tests is positive, which means that the institutional shareholding interest (changing of institutional shareholding and changing of high-risk institutional shareholding) has a positive relationship with the aggressiveness of invested company's strategy, which is completely consistent with the previous results.

4. Conclusion and Implication

Overall, this article focuses on the relationship between dynamic institutional shareholder ownership and invested company strategy. We have mainly drawn the following conclusions: (1) the change of institutional shareholding has a positive relationship with the aggressiveness of invested company strategy; (2) the change of high-risk institutional shareholding has a stronger positive relationship with the aggressiveness of invested company strategy. These two main results prove that the hypotheses are true. Based on the main results, we also introduce the interaction item, which proves that fierce market competition will enhance the positive relationship between the independent variable and dependent variable. Also, the existence of discretionary accrual will weaken the positive relationship. Our result is relatively reliable since it survives the robustness test and endogenous test.

In the practical world, we find that model technology and crawler technology are powerful methods to study the research. It can facilitate data solving and analysis to generate more accurate results. And fintech technology can facilitate the invetsment decision making in different aspects in real business world. Our article's implication can also be used to help investors to select suitable invested companies. Institutional investors can know what kind of company can be benefited more from for their shareholder ownership based on its nature and characteristics. They can find out what kind of company can bring them the highest profit and make good use of their different resources such as human and industry resources by comparing our results. Firms that need investment can maximize their benefits from investment by finding what kind of institutional investors can add more value to them. By using our outcome, firms might be able to find investors that can shed new light on their life instead of only getting funds from them. Therefore, both parties can find optimal matches by finding the most suitable investors and firms.

Our research is based on the searching of the relationship between the institutional investor's shareholding and the invested company's strategy. Nonetheless, we still have interest in whether the changing of shareholding is a form of shareholder activism. If there is an opportunity in the future to conduct a more in-depth study of the deeper meaning of shareholder ownership ratio, or if other researchers are interested in this aspect, shareholder ownership ratio and shareholder activism will be a good direction. Our research can also provide good theoretical and data support for activism-related studies.

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Resource Integration, Managerial Ties and Innovation:

The Case of Emerging Market Export Ventures

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Resource Integration, Managerial Ties and Innovation: The Case of Emerging Market Export Ventures

INTRODUCTION

Exporting has become one of the most popular ways for firms to engage in international markets (e.g., Chung, Yen, & Wang, 2019; Leonidou & Katsikeas, 2010). Hence, a comprehensive understanding of exporting from emerging markets to foreign host markets is much needed by academics, managers and policymakers (e.g., Burgess & Steenkamp, 2006; Cavusgil & Zou, 1994; Morgan, Katsikeas, & Vorhies, 2012; Sousa, Ruzo, & Losada, 2010). It has been noted that innovation plays a key role in export ventures in improving their quality, reducing their cost of production, and gaining a competitive advantage in the global marketplace (Bruns & Stalker, 1961; Damanpour, 1991). Extant research from resource-advantage theory (Gummesson & Mele, 2010; Hunt & Morgan, 1995; Hunt, Arnett, Madhavaram, 2006) and knowledge-based theory (Grant, 1996) suggests that a firm's ability to integrate various resources and knowledge can influence the firm's innovation (Grant, 1996; Liebeskind, 1996; Nonaka, 1994). Moreover, research also suggests that resources and knowledge drive innovation. Therefore, a firm's innovation could be an outcome of integrating various resources and knowledge. Likewise, according to Khanna and Palepu (2000), emerging market export ventures face poorly functioning capital, labour, information markets, and other resources compared to firms from developed markets. Given the resource constraints, many emerging market export ventures have to rely on their social networks (Chung & Kuo, 2018; Chung, Wang, & Huang, 2012; Peng & Luo, 2000; Zhou, Wu, & Luo, 2007) and tap into varied resources in order to improve their competitiveness. When exporting to other foreign host markets, emerging market export ventures need to build up their strategic resources and innovate their products, systems, and administration (Chung, Yen, & Wang, 2019) to maintain their competitive advantage in their exporting activities.

In line with the theorisation of export ventures' international expansion as a process of resource configuration through networking strategies (Ellis, 2000; Harris & Wheeler, 2005; Zhou, Wu, & Luo, 2007), I postulate a moderating mechanism of managerial ties underlying the relationship between firms' resource integration and innovation. I draw on the resource-advantage (Gummesson & Mele, 2010; Mele, Spena, & Colurcio, 2010) and knowledge-based (Hunt, Arnett, & Madhavaram, 2006; Hunt & Morgan, 1995) view of resource integration, and managerial ties literature to derive a novel conceptualisation of innovation implications of emerging market export ventures. The conceptualisation is depicted in Figure 1.

CONCEPTUAL FRAMEWORK AND RESEARCH PROPOSITIONS

The influence of resource integration on export venture innovation

Studies on export management suggest that resource integration can positively affect the export venture innovation of emerging market firms (Barki & Pinsonneault, 2005; Gummesson & Mele, 2010; Mele, Spena, & Colurcio, 2010; Storbacka, 2019; Wang & Ma, 2018). Resource integration refers to the process and forms of interaction and collaboration by integrating different resources such as knowledge, skills, financial, legal, informational and relational (Findsrud, Tronvoll, & Edvardsson, 2018; Gummesson & Mele, 2010; Hunt, Arnett, Madhavaram, 2006). By interacting with other members of the network, emerging market export ventures can access money, technology, and both tangible and nontangible resources (Hunt, Arnett, & Madhavaram 2006). Through the transferring process, emerging market export ventures will be able to analyse, evaluate, and select the proper knowledge and resources to fit their strategic purpose. Hence, transferring and sharing resources shapes export ventures' social capital, which becomes a source for resource integration. In sum, the resource transferring process can lead to a product, process, and administrative innovation for emerging market export ventures.

P1: Resource integration has a positive effect on emerging market export ventures' innovation in the host market.

Resource integration, home market ties and export venture innovation

Extant social networking literature suggests that home market ties can enhance resource integration in emerging market export ventures' innovation (Adler & Kwon, 2002; Chen & Wu, 2011; Chung, 2012; Chung & Kuo, 2018). They argue that home market ties are vital for emerging export ventures to identify market opportunities and obtain new knowledge of foreign host market opportunities. According to these studies, a close relationship/network with home market business ties means that emerging market export ventures can better integrate their resources and knowledge for their export marketing strategy and administrative system. Collectively, I propose that home market business ties can positively moderate the effect of resource integration on emerging market export venture innovation.

P2: Home market ties positively moderate the effect of resource integration on emerging market export ventures' innovation in the host market.

Resource integration, intrafirm ties (ties with internal department heads) and emerging market export venture innovation

Studies on social capital theory suggest that intrafirm ties can positively moderate resource integration and emerging market export venture innovation links (Lester, 2013; Tsai & Ghoshal, 1998). Extant literature suggests that trust can be built through positive intrafirm ties. Such trust relationships built from intrafirm ties can enhance cooperative activities among departments. Integration of knowledge and resources will drive new ways of exchanging and combining resources. Tsai and Ghoshal (1998) posited that this trust relationship among department heads could stimulate product innovation.

P3: Ties among the internal department heads (i.e., Intrafirm ties) positively moderate the effect of resource integration on emerging market export ventures' innovation in the host market.

Resource integration, host market business ties and emerging market export venture innovation

A strong connection with host market business ties can provide an excellent opportunity for emerging market export ventures to overcome the liability of foreignness. According to Zou and Cavusgil (2002) and Yang, Su, and Fam (2012), the liability of foreignness means additional costs when operating in a foreign host market. To overcome the liability of foreignness, emerging market export ventures can build strong business ties with the host market business institutions because such business ties can enhance emerging market export ventures to gain local knowledge, share learning and exchange resources (Chung, 2012; Chung & Kuo, 2018; Wang & Chung, 2020). This knowledge gaining, sharing, and resource exchange will enable emerging market export ventures to better integrate their firms' resources for the host market. Subsequently, this will enhance emerging market export ventures' innovation (e.g., product innovation or process innovation) in the context of emerging market export ventures.

P4: Host market business ties positively moderate the effect of resource integration on emerging market export ventures' innovation in the host market.

Resource integration, host market political ties and emerging market export venture innovation

Extant literature suggests that host market political ties can negatively moderate the effect of resource integration on emerging market export venture performance in the context of emerging market export ventures (Chung et al., 2016; Gu, Hung, & Tse, 2008; Sheng, Zhou, & Li, 2011). Li, Zhou, and Shao (2009) suggested that a high level of dependence on host market political ties might demotivate emerging market export ventures from being more innovative in their operations.

Moreover, previous studies on political ties also reveal that a strong connection with host market political ties might negatively impact the hiring quality of employees (Barney, 1991; Chung et al., 2016). A lack of fully qualified staff can be a detriment to the internal management capacity (Nahapiet & Ghoshal, 1998). Without fully qualified staff, emerging market export ventures cannot successfully integrate resources (Li, Poppo, & Zhou, 2008; Luo, Hsu, & Liu, 2008). This will result in poor resource integration. Accordingly, a negative impact on export ventures' innovation can result.

P5: Host market political ties negatively moderate the effect of resource integration on emerging market export ventures' innovation in the host market.

CONCLUDING REMARKS

Research concerning emerging market export ventures has received wide attention over recent years. Yet, the research has established inconsistent empirical results. Extant research concerning emerging market export ventures can benefit from a comprehensive conceptualisation that captures the complexity of how emerging market export ventures obtain and integrate resources through their social networks and achieve their firms' innovation goals in a foreign host market (Chung et al., 2016; Park & Luo, 2001; Tsai & Ghoshal, 1998; Zhou et al., 2014; Zhou, Wu, & Luo, 2007). To advance the conceptualisation that is postulated in this study, an empirical investigation is required. To achieve this, it is crucial to acquire and assemble data from multiple sources, including multiple respondents, archival data and other essential information, to fully maximise reliability and triangulate my findings.

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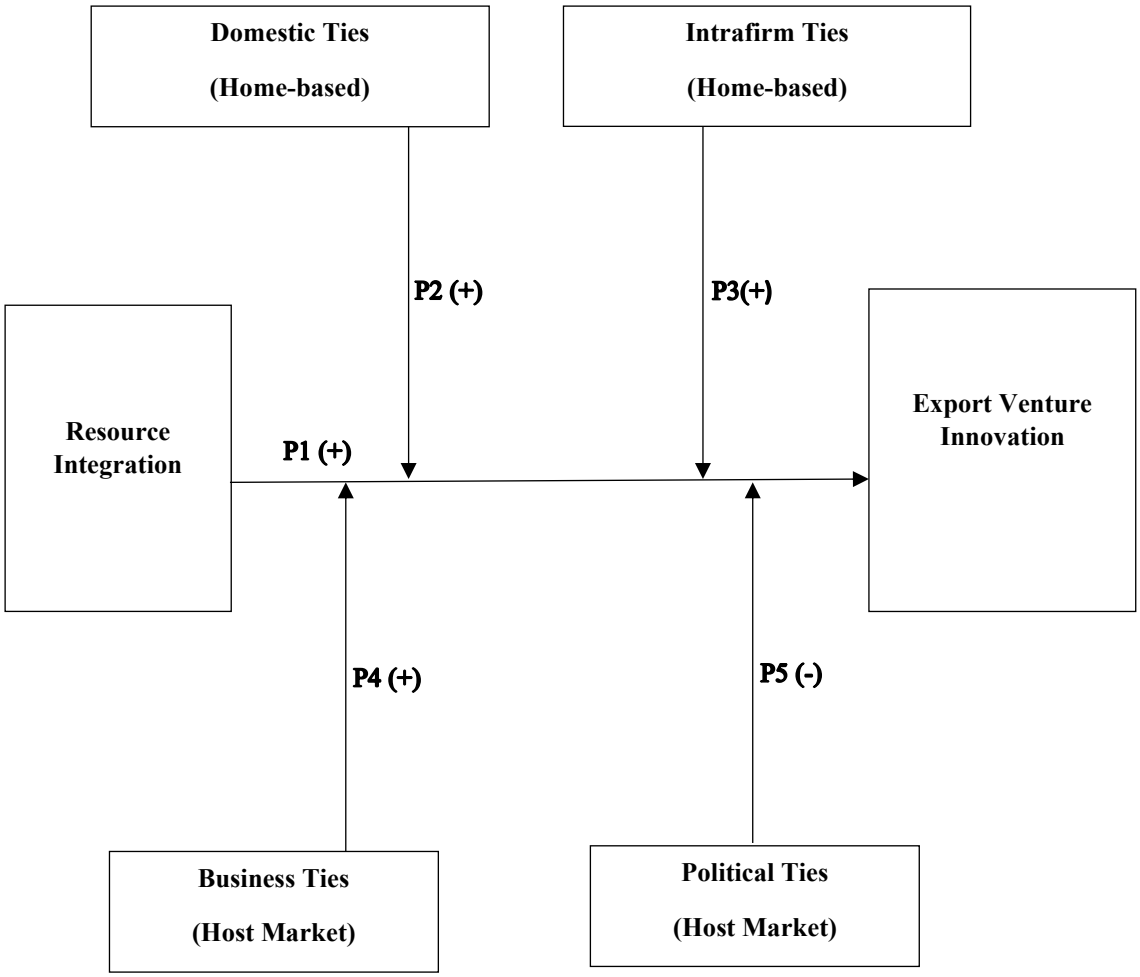
Figure 1: Resource Integration, Managerial Ties and Innovation



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Teaching International Business with Boolean Logic

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Teaching International Business with Boolean logic

Extended Abstract

International business research offers analysis optimisation when data with a significant explanatory sample is designed for different purposes. This study, reflected in trivial data of synchronous and asynchronous elements, employs Boolean logic, a form of algebra where values are used to test specific conditions with algebraic operations. We use the language of Boolean algebra to build set-theoretic propositions to help gain a deeper understanding of what poses learning is rooted in international business teaching and how to distinguish the acquired outcome. The explanation and elaboration of Boolean logic herein should help clarify this analysis language in teaching international business.

Keyword: Blended learning, Boolean algebra, higher education institutions, international business

1. Introduction

Higher Education Institutions (HEIs) support the relationship between teaching and learning. The idea that students are exposed to a range of academic elements (e.g., internationalisation, psychic distance) makes them assertive in international business (IB) logic of arguments incorporating correct reasoning. IB research offers analysis optimisation when data has a significant sample designed for education purposes. This study proves that using a Boolean algebra set-theoretic logic emerging from trivial data can provide an explanatory analysis in IB research in education. Therefore, this paper aims to explain the language of Boolean logic can build set-theoretic propositions to help gain a deeper understanding of what poses learning is rooted in teaching and how to distinguish the acquired outcome.

2. Boolean logic

To analyse the ways of putting elements together resembles a form of logic with an algebraic structure of propositions (Pierce, 1881). However, verifying propositions is challenging, for many vital concepts

can be disguised in logical clothing (Halmos & Givant, 1998; Lucas, 1995). To overcome this problem, the language of Boolean logic can enhance the authenticity of propositions by disclosing a set with many inference forms. In this regard, we propose

Proposition 1. with the language of Boolean algebra, trivial data can offer a deeper understanding in *what/how* poses IB learning be rooted in IB teaching.

Corollary 1. the language of Boolean algebra offers a diverse set-theoretic logic in the IB discipline.

Corollary 2. with the language of Boolean algebra, IB teaching and IB learning blended equivalent elements yield a blended equivalent elements relation.

Logic in Boolean algebra has applications in diverse scientific and non-scientific areas (Givant & Halmos, 2009; Halmos & Givant, 1998), and thus, it can offer insights into IB teaching. Teaching in HEIs aligns with the IB discipline, a synchronous and asynchronous academic domain students learn to identify a range of opportunities, navigate them to achieve results, and manage challenges in a global context. The relation between synchronous and the asynchronous domain and the difficulty of discerning what elements make students able to relate to learning corresponds to students' need to understand what they are doing, why they are doing it, and how to avoid probing discrepancies that impact their learning (Biggs, 1999; Biggs & Tang, 2011). In this regard, we propose

Proposition 2. when asynchronous elements are on the boundary of the synchronous (blended) elements this relation increases the distance between teaching and learning on the boundary in the intersection.

Boolean logic elucidates the synchronous/asynchronous and teaching/learning relation to explain elements with binary and ternary forms can *union, intersect* and *complement* and/or *joint, meet* and *complement*, respectively. In this regard, the study’s corollaries propose

Corollary 3. the language of Boolean algebra explains the IB teaching/learning relation with binary and ternary forms

Corollary 4. the language of Boolean algebra explains 'what/how' IB teaching elements can *union*, *intersect and complement* with IB learning elements

Corollary 5. the language of Boolean algebra explains 'what/how' IB teaching elements can *joint*, *meet and complement* with IB learning elements

3. Conclusion

In conclusion, this paper clarifies that Boolean logic can explain a relation between teaching and learning in IB education. Based on this explanation, three propositions and five corollaries are proposed, which can be extended in future research. The brief description of Boolean logic herein should be helpful to gain a fresh way of approaching this methodological analysis. Further elaboration on the insights herein is encouraged.

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A Phenomenological Study of Mindfulness as a Pathway Toward Socially Responsible Behaviour

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The Non-Linear Influence of OFDI Speed on the Innovation Quality of High-Tech Firms in terms of Intensity and Diverity: Based on The Moderating Role of Absorptive Capacity

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Extended Abstract

Abstract: This paper investigates the effect of OFDI speed on firm innovation quality. Using a dataset of Chinese high-tech firms, we test the effects of OFDI speed in terms of intensity and diversity. Results reveal a curvilinear U-shaped relationship, suggesting the costs of OFDI speed eventually outweigh the benefit after critical levels of intensity and diversity. In addition, we find that a firm's absorptive capacity during foreign expansion may have a positive moderating impact on the relationship between OFDI speed and innovation quality, which suggests that the effect is contingent on the firm's absorptive capability in dealing with the complexities inherent in international business.

Keywords: Speed of OFDI; Innovation quality; Absorptive capacity

1. **Introduction**

With the deepening implementation of Innovation driven development strategy, China's innovation output increased year by year, patent filings in 2021 accounted for 45.7% of the world, ranking No.1 in the world for 10 years, but the fact behind it is that the proportion of patent that can truly commercialized and the contribution rate to technological progress of scientific and technological achievements are both low. In the final analysis, it's a matter of inadequate quality of innovation. At the same time, due to the acceleration of technological innovation and its diffusion, the product life cycle is greatly shortened. More and more enterprises choose to invest abroad to obtain reverse technology spillover and realize their own technology innovations(HEAD K & RIES J,2008; Li Mei & Zhu Yun & Li Zhu Bo,2020). Under the influence of "Uppsala model", most scholars have used static thinking to analyze the impact of the degree of foreign investment on firm innovation, while ignoring the impact of the rate of foreign investment on innovation. Therefore, their studies cannot explain the fact that firms with the same degree of foreign investment have different levels of technological innovation.

Taking innovation quality as the research perspective, this paper studies the influence of dynamic changes of firm's overseas investment on innovation quality, and tries to explore from the following aspects: (1) From the perspectives of market scope and resource commitment level, the post-entry speed of forein investment is divided into the speed of intensity and diversity to explore the respective influence of two-dimensional OFDI speed on innovation quality of Chinese high-tech enterprises. (2) reveal how the absorption capacity moderate the relationship of dynamic expansion process of foreign investment and innovation quality; (3) conduct heterogeneity test according to regions and ownership.

2. Main Body

2.1. Main text

2.1.1. Theoretical background and hypotheses

The intensity of OFDI refers to the commitment and input degree of resources of enterprises in the same overseas market. The greater intensity of OFDI is, the deeper firms embed in the host country's market. In the early stage, setting up more overseas subsidiaries made firm have great access to cutting-edge technology and local market demand. The subsidiaries can make high-quality achievement and feed back to the parent company through knowledge spillover by imitation innovation activities (Liu Sukun & Wang Le & He Wentao et al., 2022). But if OFDI intensity accelerates, the diseconomies of time compression began to emerge, which would result in the reduction of the quality of firm innovation because of many reasons, such as s unreasonable resource allocation, policy suppression of the host country and decision-making errors. This leads us to present the following hypothesis:

Hypothesis 1. There is an inverted U-shaped relationship between OFDI speed of intensity and innovation quality.

The diversity of OFDI refers to the geographical diversity of overseas markets selected by firms. The geographical diversity of overseas markets would increases the opportunities to acquire differentiated cutting-edge knowledge and technology(Kim W C &Hwang P & Burgers W P, 1993), which help improve firm’s ability to learn, absorb and integrate heterogeneous knowledge. But likewise, as geographic expansion accelerates, firm’s innovation would also be limited by the diseconomies of time compression and the complexity of international market expansion. This leads us to present the following hypothesis:

Hypothesis 2. There is an inverted U-shaped relationship between OFDI speed of diversity and innovation quality.

From the perspective of OFDI intensity, the knowledge firms can get all from the specific host country, so absorptive capacity is reflected in the degree of master and applicate specific knowledge. At the beginning, the increasing absorptive capacity enables numerous subsidiaries in the same market to cooperate efficiently

to integrate foreign advanced technical knowledge to back to the parent company faster(Chen V Z & Jing L & Shapiro D M, 2012). However, the rapid growth of absorptive capacity would induce host country's policy suppression and competitors' knowledge blockade, which will degrade the quality of innovation instead. This leads us to present the following hypothesis:

Hypothesis 3. Absorptive capacity positively moderates the effect of OFDI speed of intensity on innovation quality, and can delay the negative effect caused by gradual OFDI intensity acceleration to some extent.

From the perspective of OFDI diversity, as OFDI is scattered in different countries, different host countries require subsidiaries to learn, integrate and apply heterogenous knowledge, reducing the dependence on specific knowledge and experience. It would be more difficult to rapidly integrate knowledge and experience, so the positive and negative effects of absorptive capacity would be weakened, and the adjustment of innovation quality would be limited.

Hypothesis 4. Absorption capacity positively moderates the effect of OFDI speed of diversity on innovation quality, but the moderating effect is limited.

2.1.2. Methods and results

As for the indicators selection, Citation-weighted patents is used to indicate innovation quality, and the number of overseas subsidiaries and overseas markets is combined with the "time" dimension to represent the OFDI speed of intensity and diversity. The R&D investment intensity is used to indicate absorption capacity, and age, size, type, market competition, government subsidy et al. are added to the model as the control variables. The empirical sample includes 5570 observations from 1143 enterprises. Since the years of initial foreign investment are different, the data are unbalanced panel data. After the Hausman model test, the value of p is zero, that is, the original hypothesis is rejected, so the two-way fixed effect model is selected to control the industry and annual effects for estimation.

We show the panel-data analysis results of our regression model in Table 1, model2 and 4 meet the three conditions for testing the inverted U shape proposed by Lind & Mehlum(Lind J T & Mehlum H. , 2010),

which support Hypothesis 1a and 1b. Fig.2 illustrates the impact of OFDI speed of diversity on innovation quality is larger than the impact of OFDI speed of intensity and the OFDI speed of diversity reaches the inflection point earlier. Besides, we add the interactions with absorptive capacity in the Model 3 and 5. The result support the Hypothesis 2a, but reject Hypothesis 2b.

2.2. Tables and Figures

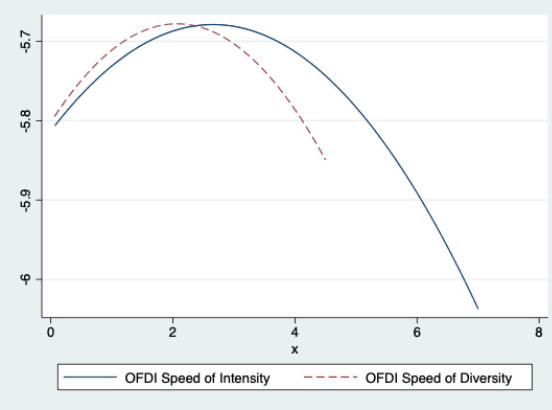
2.2.1. Tables

Table 1 Results of regression analysis on Citation-weighted patents.

Variables	Conrol variables	OFDI speed of intensity		OFDI speed of diversity	
	(1) lnCWP	(2) lnCWP	(3) lnCWP	(4) lnCWP	(5) lnCWP
Age	-0.069* (-1.90)	-0.013 (-0.35)	0.028 (0.73)	-0.004 (-0.10)	0.050 (1.26)
Size	0.214*** (18.36)	0.355*** (20.94)	0.364*** (21.18)	0.355*** (21.04)	0.363*** (21.25)
Mc	-0.239*** (-12.15)	-0.381 (-1.46)	-0.599* (-1.93)	-0.389 (-1.48)	-0.606** (-1.98)
Gs	-0.028* (-1.79)	-0.039* (-1.67)	-0.001 (-0.04)	-0.041* (-1.76)	-0.001 (-0.05)
RoaB	0.543*** (3.62)	1.191*** (5.93)	0.436** (2.07)	1.184*** (5.81)	0.372* (1.74)
TSpeed_I2		-0.019*** (-4.19)	-0.014*** (-3.10)		
TSpeed_I		0.101*** (3.49)	0.055** (1.96)		
TSpeed_D2				-0.029** (-2.29)	-0.164*** (-4.24)
TSpeed_D				0.120*** (2.67)	0.330*** (3.94)
TSpeed_I2*AC			-0.006*** (-4.45)		
TSpeed_I*AC			0.042*** (4.51)		
TSpeed_D2*AC					-0.023 (-1.54)
TSpeed_D*AC					0.082** (2.46)
AC			0.050*** (8.97)		0.050*** (8.88)
_cons	-3.133*** (-13.68)	-5.813*** (-4.63)	-5.269*** (-3.58)	-5.802*** (-4.60)	-5.353*** (-3.68)
Insudtry	No	Yes	Yes	Yes	Yes
year	No	Yes	Yes	Yes	Yes
N	5381	3509	3404	3509	3404
adj. R^2		0.306	0.335	0.304	0.335

t statistics in parentheses, $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

2.2.2. Figures



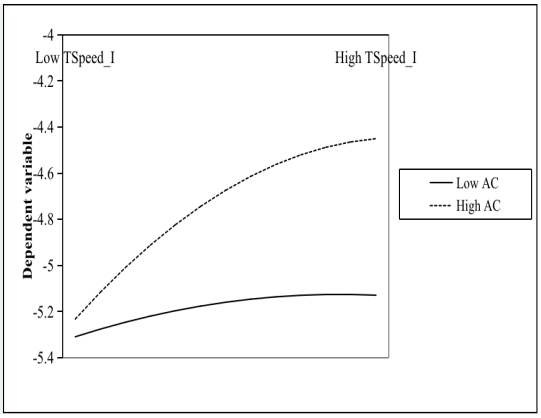


Figure 1 The inverted U-shaped relationship between OFDI Speed and innovation Quality.

Figure 2 Moderating effect of absorptive capacity on the relationship between OFDI speed and innovation quality in intensity

3. **Conclusion**

Our study reveal a curvilinear U-shaped relationship between firm's OFDI speed and its innovation quality. Initially, knowledge spillover and imitation innovation activities positively influence innovation quality as OFDI speed of intensity and diversity increase. But when OFDI speed of intensity and diversity arrive a certain extent, the costs of OFDI acceleration eventually outweigh the benefits and thus result in the curvilinear. By comparing the curvilinear, we find that the impact of OFDI speed of diversity on innovation quality is larger than the impact of OFDI speed of intensity and reaches the inflection point earlier. Meanwhile, absorptive capacity plays a positive moderating role between OFDI speed of intensity and innovation quality but is ineffective between OFDI speed of diversity and innovation quality. We infer that OFDI speed of diversity may increase the difficulty of learning, absorbing and integrating knowledge, so the positive and negative effects of absorptive capacity are weakened.

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Paper Number: MS0012

Expatriates' Happiness During the Covid-19 Pandemic

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Expatriates' Happiness During the Covid-19 Pandemic

Abstract

How will expatriates' happiness change during the COVID-19 pandemic? This paper uses semi-structured interviews with 20 expatriate employees to find out how they feel when expatriating during the epidemic. Although studies have shown that culture clashes and family factors contribute to discomfort in expatriate work, the results show that employees are happier during their assignments, but their concerns about their future careers remain. This provides insights into the management of expatriate assignments, as companies can provide better job security for expatriate employees so that they are fully committed to their assignments.

Keywords: Expatriate Management, Happiness, COVID-19

1. Introduction

COVID-19 was first identified in 2019 and in the three years since, its impact has spread across all continents, causing more than half a billion infections (WHO, 2022). While the epidemic has had some impact on internationalization, economic globalization remains a major trend in the world. Human capital is an organization's most valuable asset (Harsh and Prasad, 2020) and occupies an important place in business management. The expatriation of employees is an important way for multinational companies to achieve internationalization. Although a significant number of companies encourage or require employees to work from home due to the impact of the epidemic (Gartner, 2020), employee expatriation is still inevitable. Much of the existing research focuses on the issues and challenges faced by expatriate employees from cultural conflicts and family. This paper will use interviews to gain insight into the happiness and concerns of expatriate employees in the context of the epidemic and provide insights into how to improve expatriate management.

2. Literature review and framework

There is a large volume of published research focusing on the impact of cultural differences and family factors imposed on expatriates. Cultural conflicts are mainly reflected in communication issues, such as language barriers, communication styles, and power distance. When expatriates first arrive on site, misunderstandings caused by language barriers can have a negative impact on interactions with local staff (Sylwia and Doris, 2021). Hofford's power distance theory states that with different cultures, countries have different power distances. Inconsistencies in perceived power distance between supervisors and subordinates can lead to misunderstandings and reduced productivity (Richard et al, 2022). In addition to this, cultural maladjustment may lead to poor performance and even early termination of assignments, affecting the operation of the company (Bonache et al, 2020).

Family factors refer to the support and influence of spouses and other family members on the expatriate (Hutchings, 2021). Studies have shown that family factors significantly influence the willingness to accept an assignment (Brown, 2008), which reflects the fact that the family factor is an important factor in determining the success of an expatriate assignment. For those expatriates whose families remain in their home country, they will face conflicts between work and family. Due to time and space constraints, expatriates may not be able to balance work and family, especially if they have young children or older family members (Hutchings, 2021). If family members are not understanding and supportive, this can cause emotional stress for expatriates, affecting their mood and performance at work (Cole, 2011). For expatriates with families, adaptation and communication between family members and the local community can also have a direct impact on the expatriate's work (Sarkiunaite & Rocke, 2015).

Happiness is the state of feeling good or expressing pleasure, also known as satisfaction with life, and is a subjective thing that varies from person to person (Moussa & Ali, 2022). Therefore, the questions

related to an individual's happiness may refer to his/her satisfaction with life, income, health, area of residence, etc. (Bérenger and Silber, 2022). There has been much literature on individual sense of happiness. Despite the maturity of the research on happiness, a comprehensive one on the happiness of expatriate employees has not been conducted.

3. Method and Results

This paper uses a qualitative research approach to understand the concerns and happiness faced by expatriates and two rounds of interviews using semi-structured interviews. Through random sampling, three employees who were posted to different countries participated in the in-depth interviews. Due to time and space constraints, the interviews were conducted by means of an internet phone call. The pre-determined questions related to their apprehensions and feelings about work and life from the very beginning when they were assigned to work on-site and how they adapted.

Interviews revealed that expatriate employees are satisfied with their work and life when they are in residence. In terms of cultural differences, they take the initiative to understand the cultural and language differences prior to the assignment to minimize the possibility of cultural differences causing unhappiness. Furthermore, a significant number of expatriates are small language translators who have a good understanding of the foreign culture and are eager to apply what they have learned in their working lives to further improve their language skills. Han, a French major on assignment to the DRC, says he has been studying in China and has been working in French-related jobs since graduating from university, he is eager to have the opportunity to experience the culture of the French-speaking area. Additionally, the pressure of working in China is so great that he says he prefers his current job as an expatriate. Shang, who is on an expat assignment to Panama, expressed a similar view that there is too much competitive pressure and frequent overtime in China, while expat assignment is a good way to

balance work and life, and that over-pressing employees is against local union rules and is illegal there. Expatriate work, therefore, helps them to get a work-life balance. Furthermore, Shang also says that expatriate pay is higher, roughly four to five times that of similar jobs at home, but the expenses are lower, the financial pressure is less and you can leave a lot of savings over the years. In addition to over-working and financial pressure, Carlos said that although he is now in Kenya, technology has not stopped him from communicating with his family, even though there are time differences, he does communicate with them by video phone in his free time.

Nowadays, the world is in the grip of an epidemic, but vaccinations are widely available which reduce lethality, so there is no need to worry too much. Although they have a strong sense of well-being in expatriate work, they also express concern for their professional future. If they return to work in their home country after many years, it will be difficult to earn the same salary as when they were expatriates and the lack of synchronization of development between countries may make them uncompetitive in the face of younger job seekers. Multiple thoughts about the future are a major source of worry.

Table 1 Background information of interviewed respondents

Number	Gender	Education Background	Location	Occupation	Number	Gender	Education Background	Location	Occupation
1	Male	Undergraduate	Africa	Sales	11	Male	Undergraduate	South America	Sales
2	Female	Undergraduate	Africa	Translator	12	Male	Undergraduate	Africa	Engineer
3	Female	Undergraduate	Africa	Translator	13	Male	Undergraduate	Africa	Translator
4	Female	Master	South America	Translator	14	Male	Undergraduate	Africa	Translator
5	Male	Junior college	Africa	Translator	15	Female	Master	South America	Translator
6	Female	Undergraduate	Asia	Translator	16	Male	Undergraduate	Asia	Translator
7	Male	Undergraduate	Africa	Sales	17	Male	Undergraduate	Africa	Sales
8	Male	Undergraduate	Asia	Translator	18	Female	Undergraduate	Africa	Sales
9	Male	Master	South America	Translator	19	Male	Undergraduate	Africa	Engineer
10	Male	Undergraduate	Africa	Sales	20	Male	Undergraduate	Africa	Translator

Table 2 Semi-structured Questions

Interview target	Questions
Expatriate employees	(1) Sociodemographic information (2) Why did you choose to work on assignment? (3) What were your main worries before you arrived? (4) What are some of the more uncomfortable aspects of being in a new working or living environment? (5) How does it feel to get along with colleagues or leaders from other countries? (6) How do you feel about your workplace compared to your home country? (7) Considerations for the future

4. Discussion & Conclusion

This paper uses interviews to understand the happiness of expatriate employees in their working lives during the epidemic and finds that while happiness is higher when on the assignment, their confusion about future career plans causes them to feel worried. Although the epidemic has deepened the world's isolation, technological advances have compensated for this. Therefore, to make employees more fully engaged in their assignments and to allay their concerns, multinational companies can provide them with additional assignment security and a reasonable career arrangement when they return home from their residency after many years. Most of the respondents in this study were translators or salespeople, a relatively homogeneous occupational group, and future research will investigate the thoughts of

expatriate employees from different industrial backgrounds more broadly.

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The Determinants of Knowledge Sharing in Online Communities:

The Role of Community Culture, Personality and P-E Fit

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The Determinants of Knowledge Sharing in Online Communities: The Role of Community Culture, Personality and P-E Fit

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Abstract

Online community is regarded as an essential element of Web 2.0 where individuals bring in their knowledge and share ideas. Previous studies on the potential drivers of community members' knowledge-sharing intention placed a great emphasis on either individual or the community, while ignoring the synergistic effects exerted by both of them. Drawing upon P-E fit theory and ASA framework, this study explores the effect of community culture and members' personality traits on perceived P-E fit, as well as the impacts of culture, personality and fit perception on members' knowledge-sharing intention. The preliminary result of pilot study is discussed.

Keyword: Online community, Knowledge sharing, Community culture, Personality traits, P-E fit

1. Introduction

Online community (OC) describes a group of people with a common interest or a shared purpose, who uses computer systems to support and mediate social interaction and facilitate a sense of togetherness (Preece, 2000). As an essential element to achieve the network effect of Web 2.0, OC promotes the creativity and quality of members' contributions (Mladenow, Bauer, & Strauss, 2014). However, organizing and maintaining an OC is not an easy task (Butler, 2001). The exchange processes among community members are not based on formal contracts but on relational contracts, in the form of trust, shared norms and values, as well as general reciprocity (Demil & Lecocq, 2006; O'Mahony & Ferraro, 2007). In addition, due to the nature of "openness" and "voluntary participation" of OCs, about 68% of newcomers are reported to leave that community after their first participation (Ren et al., 2012; Shen, Li, Sun, & Zhou, 2018). Since OCs benefit from the principle that active participants bring in their knowledge and share ideas (Mladenow et al., 2014: 77), it is necessary to identify the potential

drivers of community members' knowledge-sharing intention (Liao, Huang, & Xiao, 2017). While previous studies shed light on the members' motivational drivers from individual level and community level (eg, Preece, 2000; Muniz & O'Guinn, 2001; Füller, Matzler, & Hoppe, 2008), most of them ignored the synergistic effects exerted by both community and individual (Shen et al., 2018).

The present paper seeks to explore the determinants of community members' knowledge-sharing intention from both individual and community perspectives. Based on Person-Environment (P-E) fit theory and Attraction-Selection-Attrition (ASA) framework, this study assumes that the characteristics of the community founder and early members contribute to the formation of community culture (Schneider, Goldstiein, & Smith, 1995). Community culture then determines the types of people who are attracted to, are selected by, and stay with the community. People choose to stay and contribute when they perceive fit with the community and vice versa. In this regard, I propose that knowledge sharing in OCs is largely influenced by community culture, individual's personality and the P-E fit. Thus, this paper initially defines and investigates community culture in several OCs. It then analyzes the impacts of community culture, personality traits and perceived P-E fit on community member's knowledge-sharing intention. In addition, evidence shows that personality traits can affect individuals' values, cultural preferences and the likelihood of fit perception (Judge & Cable, 1997; Piasentin & Chapman,2006), which helps to explain why people react differently in the same situation (Nguyen, 2021). Given the significance of individual differences, this paper further examines the influence of various types of personality-culture interactions on P-E fit perception.

2. Literature Review

2.1. Community culture

Organizational culture research has been developed from five perspectives: values, stories, frames, toolkits, and categories (Giorgi, Lockwood, & Glynn, 2015). Among them, the conceptualization of culture as values is the best known and well examined (Rohan, 2000; Vaisey, 2009; Glynn, Giorgi, & Lockwood, 2012). In this perspective, culture is often considered as a "web of meanings" that guides and constrains thoughts and actions (Geertz, 1973; Lamont & Small, 2008; Giorgi et al., 2015). Schein

(1985) claimed that culture contains three levels: visible artifacts, espoused value, and the invisible beliefs and assumptions. Notably, Alavi, Kayworth, & Leidner (2005) suggested that the majority of prior research aimed at exploring the linkage between culture and social group's behaviors and actions were based on values-based theories of culture. Although a few studies have confirmed the existence of shared norms and beliefs among community members as well as several types of community climates (e.g., O'Mahony & Ferraro, 2007; Zhao, 2019), evidence about the existence and impacts of community culture is still scant. Thus, this study defines community culture as "the shared values among community members".

Meanwhile, culture is regarded as the most important enabler of the management and transfer of knowledge (Wei & Miraglia, 2017). Cultural values such as high levels of openness, trust, and teamwork could promote knowledge sharing behavior. On the other hand, apprehension, formal controls, and an emphasis on individual performance, are known as "bad" values that lead to dysfunctional sharing behavior (Christ, Sedatole, Towry, & Thomas, 2008). However, in contrast to traditional organizations, knowledge-sharing behavior in OC is generally carried out by individuals. As a result, what is considered "bad" in traditional organizations, such as the emphasis on individual performance, may actually promote willingness to share in OCs. Considering that there is still a lack of detailed analysis that outlines specific types of values and how these values combined with individual relates to knowledge sharing (Alavi et al., 2005), I adopt Organizational Cultural Profile (OCP) which includes 7 aspects of cultural values to examine the effects of community culture. Each online community has its unique community culture, and the impact of different kinds of community culture on member's knowledge-sharing intention varies.

> *H1: (a) Competitive culture has a negative effect on member's knowledge-sharing intention. (b) Social responsive culture, (c) supportive culture, (d) innovative culture, (e) emphasis-on-rewards culture, (f) performance-oriented culture and (g) stable culture have positive influence on knowledge-sharing intention.*

2.2. P-E fit

P-E fit refers to the degree of congruence between individual and environmental attributes (Caplan, 1987). It examines the joint influence of individual and environmental factors on human attitude and behavior (Kristof-Brown et al., 2005). When a fit exists between people and their environment, people are encouraged to develop pro-social attitude and behavior (Astakhova, 2016; Shen et al., 2018). Through the years, P-E fit has been quantified by objective approaches that compare measurements of person attributes to environmental attributes, and perceptual approaches that ask individuals to assess their fit directly (Follmer, Talbot, Kristof-Brown, Astrove, & Billsberry, 2018). Nevertheless, meta-analytic evidence shows that fit perceptions are more predictive than objective assessments (Kristof-Brown et al., 2005). In line with the previous research, I propose that when community members perceive fit with community culture (values), they tend to continuously use that community and share knowledge.

H2: Community member's perception of person-environment fit positively affects knowledge-sharing intention.

2.3. Personality

The Big Five model has been widely used to investigate knowledge sharing in traditional organizations (Matzler, Renzl, Müller, Herting, & Mooradian, 2008). It consists of five personality traits: extraversion, neuroticism, openness to experience (or intellect), agreeableness and conscientiousness. Mooradian, Renzl, & Matzler (2006) suggested that individuals with relatively stable personality profiles, such as high in agreeableness, and conscientiousness, are more likely to share their knowledge with others. Wang & Yang (2007) found a positive relationship between extraversion and knowledge-sharing intention. Furthermore, Matzler et al. (2011) indicated that open individuals with more curiosity develop more expertise, and they are more engaged in contributing knowledge. In contrast, highly neurotic traits could lower people's capacity to articulate and comprehend knowledge (Ahmad & Karim, 2019). Consistent with these predictions, I propose that extraversion, agreeableness, conscientiousness, and openness to experience positively influence community member's willingness to contribute, while neuroticism has an opposite effect.

H3: (a) Agreeableness, (b) conscientiousness, (c) extraversion and (d) openness to experience are positively related to member's knowledge-sharing intention. (e) Neuroticism has a negative impact on knowledge-sharing intention.

Moreover, Judge & Cable (1997) argued that people prefer organizational cultures that complement their personalities and values. Specifically, agreeable people are usually altruistic and cooperative who value supportive culture and avoid conflicts (Costa & McCrae, 1992). Conscientious individuals who are orderly, ambitious and achievement-oriented should be attracted to performance-oriented culture. Extraverts seek sociable and competitive environments while despising supportiveness. Neurotic people who favor stability and security are less likely to be lured to innovative culture. People with a high level of openness, on the other hand, prefer innovative culture with few constraints and regulations. Also, Piasentin & Chapman (2006) claimed that people high in openness are more likely than conventional ones to perceive fit with their organizations. Taken together, I propose that generally, agreeableness, extraversion and openness to experience promote the perception of fit, while neuroticism and conscientiousness have the opposite effect. Community members tend to perceive fit when the certain community culture is consistent with their personalities.

H4: (a) Agreeableness, (b) extraversion and (c) openness to experience promote the perception of fit, whilst (d) conscientiousness and (e) neuroticism impede the fit perception.

H5: Community members who are high in agreeableness are more likely to perceive fit in (a) supportive and (b) social responsive cultures and less likely to perceive fit in (b) competitive culture.

H6: Community members who are high in conscientiousness are more likely to perceive fit in (a) emphasis-on-rewards, (b) performance-oriented and (c) stable cultures and less likely to perceive fit in (d) innovative culture.

H7: Community members who are high in extraversion are more likely to perceive fit in (a) competitive and (b) social responsive cultures and less likely to perceive fit in (c) supportive

culture.

H8: Community members who are high in openness to experience are more likely to perceive fit in (a) innovative culture and less likely to perceive fit in (b) stable culture.

H9: Community members who are high in neuroticism are more likely to perceive fit in (a) stable and (b) supportive cultures and less likely to perceive fit in (c) innovative culture.

3. Methodology

3.1. Pilot study

The Pilot study is designed to examine the validity of measurement scales. It consisted of two online questionnaires on the topics of "OC I currently use most often" and "OC I used most often before but have quit". A total of 200 respondents from China were recruited to answer the following questions based on the OC they envisioned: perceived community culture employing Organizational Culture Profile Revised (Sarros, Gray, Densten, & Cooper, 2005), perceived fit using double-barrel questions of personality and values (Cable & Judge, 1996), continuous knowledge-sharing intention (Ryu, Ho, & Han, 2003), and personality traits applying BFI-2-S (Soto & John, 2017b). A seven-point Likert scale was used for all measurement items, with anchors ranging from (1) strongly disagree to (7) strongly agree. In the survey of "OC I used most often before but have quit", I've set up certain filters to weed out cases where people left the community due to external circumstances (e.g., friends who stopped using the OC, network access restrictions, etc.) and only gather the misfits. Based on the results, four communities from China were chosen as the research subject in the main test. The following selection criteria were used: (1) a large number of users, (2) community commonality and (3) the possibility to perform pairwise comparisons.

3.2. Main test

Study1 investigates the community culture of the chosen OCs. First, thousands of conversations in each community will be crawled at random. The textual information will be analyzed using Linguistic

Inquiry and Word Count (LIWC, Pennebaker, Francis, & Booth, 2001). Results will be classified into various types of cultural characteristics and summarized as each OC's distinct culture.

Study2 is an online survey to validate hypotheses. Based on the preliminary results of the pilot study, the adjusted measurement scales will be employed. Questionnaires will be distributed in the context of the selected OCs and will be administered separately to those who are active in that community and those who were active but have dropped out. It is expected that 60-100 responses will be recovered for each OC.

4. Preliminary Results and Discussion

A preliminary analysis of the pilot study has been completed. Table 1 reports descriptive statistics, reliabilities and correlations among variables. The reliability of competitive culture and personality scales are close to or below the recommended 0.7 (Fornell & Larcker, 1981), which calls for the adjustment. I conduct an explorative factor analysis for the 5-item competitive culture scale. The rotated component matrix is shown in Table 2, where COM1 and COM5 are attributed to one factor and COM2, COM3 and COM4 are grouped as another (KMO=.74, p<.001). Since OCP was originally designed to assess culture in traditional organizations, it is necessary to use items more relevant to OC. As a substitute, I apply the concept of internet aggression. Evidence shows that a competitive environment encourages internet aggression (Anderson & Morrow, 1995), which is described as “an overt, intentional act of aggression towards another person online” (Ybarra1 & Mitchell, 2004: 1308). The internet aggression in OC has negative impact on community members’ knowledge contribution (Xu, Xu, & Li, 2016). Therefore, I change COM2 “An emphasis on quality”, COM3 “Being distinctive”, and COM4 “Being different from others” to “An emphasis on measurable goals (network traffic, number of followers, number of “like”, etc.)”, “Community members are being aggressive” and “A lack of formal rules or policies to regulate quarrels between community members”. As for the personality measurement, I change the 30-item BFI-2-S to 60-item BFI-2 to increase the reliability and validity (Soto & John, 2017a).

The following four communities were selected for the main test: TikTok (46 of 200 respondents), Kuaishou (26 respondents), Weibo (26 respondents), and Red Book (25 respondents). All of them are active communities with a huge number of members in China. The first two are short-form video hosting communities, while the remaining two are social networking communities. Besides, Weibo and Kuaishou have a more balanced gender distribution, whereas TikTok and Red Book have more female members. These distinctions enable me to conduct gender and content comparisons across communities in the main test.

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Table 1 Descriptive Statistics, Correlations, and Reliabilities

		M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	Gender[a]	0.63	0.48																		
2	Age	27.27	6.82	-.19**																	
3	Education background	2.67	0.80	.09	.30**																
4	Duration of Internet usage	4.46	1.16	-.17*	.14*	.24**															
5	Competitive culture	4.87	1.04	.07	.03	.06	-.06	(.74)													
6	Social responsive culture	4.78	1.19	.04	.01	.04	-.07	.63**	(.84)												
7	Supportive culture	5.16	0.99	.16*	-.02	.03	-.08	.56**	.74**	(.81)											
8	Innovative culture	4.94	1.16	.11	-.07	-.08	-.16*	.65**	.76**	.77**	(.87)										
9	Emphasis-on-rewards culture	5.04	1.31	.08	.01	.00	-.16*	.56**	.73**	.72**	.77**	(.87)									
10	Performance-oriented culture	5.02	1.10	.06	-.01	-.02	-.13	.69**	.78**	.66**	.80**	.76**	(.83)								
11	Stable culture	4.69	1.18	.12	.08	.03	-.11	.56**	.76**	.71**	.75**	.69**	.70**	(.83)							
12	Agreeableness	5.06	0.79	.23**	.14	.21**	-.06	.20**	.25**	.32**	.24**	.23**	.20**	.26**	(.64)						
13	Conscientiousness	5.02	0.88	.13	.20**	.28**	-.02	.14*	.19**	.25**	.17*	.15*	.11	.22**	.72**	(.72)					
14	Extraversion	4.18	1.01	-.19**	-.04	.04	.03	.15*	.21**	.22**	.22**	.22**	.18*	.21**	.31**	.33**	(.76)				
15	Neuroticism	3.59	0.99	-.00	-.14*	-.25**	-.06	-.08	-.19**	-.19**	-.09	-.12	-.12	-.16*	-.49**	-.56**	-.43**	(.74)			
16	Openness to experience	4.78	0.88	.09	.11	.13	-.04	.25**	.16*	.21**	.22**	.13	.16*	.19**	.42**	.41**	.23**	-.16*	(.70)		
17	Perceived P-E fit	4.52	1.35	.09	.14	.08	-.14	.57**	.76**	.62**	.63**	.65**	.67**	.73**	.32**	.28**	.19**	-.21**	.24**	(.92)	
18	Knowledge-sharing intention	4.60	1.47	.05	.04	.06	-.18*	.58**	.67**	.56**	.65**	.66**	.70**	.60**	.27**	.21**	.25**	-.18**	.27**	.72**	(.90)

Note. $N = 200$ Internal consistency reliability estimates (Cronbach's alphas) appear in parentheses along the diagonal.

[a] Dummy coded: 0 = male, 1 = female.

*$p < .05$. **$p < .01$.

Table2 Rotated Component Matrix[a]

	Component1	Component2
COM1	0.416	**0.641**
COM2	**0.770**	0.261
COM3	**0.859**	0.195
COM4	**0.799**	0.032
COM5	0.020	**0.900**

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.[a]

[a] Rotation converged in 3 iterations.

Paper Number: MS0014

Are Firms More Concerned about Analysts' Earnings Forecasts after the Split-share Structure Reform? Evidence from China

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Are Firms More Concerned about Analysts' Earnings Forecasts after the Split-share Structure Reform? Evidence from China

Extended Abstract

This study attempts to explore whether firms are more concerned about financial analysts' earnings forecasts after the Split-share Structure Reform (SSR) in China. The empirical evidence shows that firms are more likely to fulfill the earnings expectations after the SSR. This goal is achieved by manipulating the third-quarter earnings to signal downward earnings to the analysts. Collectively, this study provides a new perspective of regulating the relationship between Chinese listed firms and financial analysts after the SSR.

Keywords: Capital Structure, Split-share Structure Reform, Analysts' Earnings Forecasts, Earnings Management, Earnings Guidance

1. Introduction

The Split-share Structure Reform (SSR) in China converted the shares of controlling shareholders from non-tradable to tradable, signals a landmark in China's capital market. Most of the existing studies focus on the economic consequences of the SSR on firms' corporate governance, earnings quality and operating performance (Liao, Liu, & Wang, 2014; Liao, Shen, & Li, 2008), while scholars pay less attention to how the SSR affects the relationships between enterprises and external third parties, especially financial analysts. Financial analysts play a crucial role in alleviating information asymmetry in China's capital market (Gu, Li, & Yang, 2013; He, Xiao, & Zhu, 2013; Li & Xiao, 2015). In this study, we first test whether firms become more inclined to meet or beat analysts' earnings forecasts after the SSR. Second, we conjecture that firms are motivated to steer analysts'

earnings forecasts downwards after the SSR because firms want to meet or beat the earnings' forecasts more easily. Finally, we assume that manipulate the third quarter's earnings downward is one of the means to guide analysts to walk their forecasts downwards.

2. Literature Review and Hypotheses Development

Before the SSR, the shares of Chinese listed firms are artificially divided into tradable and non-tradable according to whether they could be listed and traded freely on the stock exchange. The Chinese government launched the Split-share Structure Reform in 2005 to float the restricted shares according to a certain schedule. The impact of the SSR has gradually emerged. Some studies find that the SSR can significantly enhance the effectiveness of governance mechanisms and reduce agency costs (Chen, Chen, Schipper, Xu, & Xue, 2012; Hou & Lee, 2014). However, the SSR can improve disclosure quality only for nonfinancial information due to the high proprietary cost of financial information (Zhang & Liao, 2010).

Bartov, Givoly, and Hayn (2002) find a valuation premium of meeting analysts' current earnings expectations, irrespective of whether the meeting of earnings expectations is genuine or purposely fulfilled. Since meeting or beating analysts' earnings forecasts becomes dogma in the corporate culture if the firms suffer a loss in market value, and the top management team will strive to achieve positive earnings surprises in different ways (Baik & Jiang, 2006; Matsumoto, 2002). With the successful completion of the SSR, the firm value is gradually unified with the market value. In this case, Chinese listed firms have greater incentives to increase firm value by meeting or beating analysts' earnings expectations. Therefore, we formulate the following hypothesis.

Hypothesis 1. A firm is more likely to fulfill analysts' earnings expectations after the SSR.

The extant literature finds that managers take actions to guide analysts' expectations downward to avoid negative earnings expectations (Brown & Higgins, 2005; Matsumoto, 2002; Richardson, Teoh, & Wysocki, 2004). Hamilton, Hirsch, Rasso, and Murthy (2019) also suggested that managers are more likely to use income-decreasing to convey a pessimistic signal to the analysts to meet or beat analysts' earnings forecasts. Therefore, we formulate the following hypothesis.

Hypothesis 2. A firm is more likely to guide analysts' earnings forecasts downward after the SSR.

Instead of following the opportunistic perspective, Lin, Liu, and Noronha (2016) find that managers have strong motivations to employ quarterly discretionary accruals as a means of delivering inside information to external stakeholders. Since quarterly financial statements are not subject to audits in China, and the third quarter financial statements are the last financial reports publicly available to the analysts. As such, we formulate the following hypothesis.

Hypothesis 3. Firms show higher intention to manipulate the third quarter earnings management to guide analysts walk down the earnings expectation after the SSR.

3. Method and Results

3.1 Are firms more likely to meet or beat analysts' earnings forecasts after the SSR?

We develop the following logistic regression model to test whether firms' motivation of meeting or beating analysts' earnings forecasts increases after the SSR:

$$MBE = \alpha_0 + \alpha_1 SSR + Control\ Variables + Year\ FE + Industry\ FE + \varepsilon \quad (1)$$

Where *MBE* is the occurrence of meeting or beating earnings expectations, equals to 1 when the forecast error (Actual EPS minus Forecast EPS) is nonnegative, 0 otherwise. *SSR* equals to 1 if the observation period falls after the stock split reform, 0 otherwise. Consistent with our prediction, the coefficient on the SSR is positive and significant at the 5% level, indicating that the listed firms are more likely to meet or beat analysts' earnings forecasts after the SSR.

3.2 Are firms more likely to guide analysts' earnings forecasts downward after the SSR?

To test whether the firms are more likely to guide analysts' earnings forecasts downward after the SSR, we develop the following model:

$$DIFF = \alpha_0 + \alpha_1 SSR + Control\ Variables + Year\ FE + Industry\ FE + \varepsilon \quad (2)$$

Where *DIFF* is the difference between the last forecasted value of year-firm analyst and the first forecasted value. Consistent with our prediction, the coefficient on the SSR is negative and significant at the 1% level, indicating that analysts' earnings forecasts are usually walked down through the year after the SSR. The result is similar to the research in US (Heflin, Kross, & Suk, 2016), which found firms tend to adopt downward management forecasts to create an achievable expectation after the implementation of Regulation Fair Disclosure.

3.3 How firms guide analysts' earnings forecasts downward after the SSR?

Before conducting Equation (3), we first test the tendency of firms to manage the earnings downwards in the third quarter after the SSR[1]. The Equation (3) is developed to test the relationship between the extend of earnings management in the third quarter and the earnings level evaluated by the analysts.

$$FEPS = \alpha_0 + \alpha_1 SSR + \alpha_2\, EM\_09 + \alpha_3 SSR^*\, EM\_09 + Control\ Variables + Year\ FE + Industry\ FE + \varepsilon \quad (3)$$

Where *EM_09* equals to 1 if the discretionary accruals of third quarter are downward, and equals to 0 otherwise. *FEPS_3Q* is the median of the analysts' earnings forecast values after the third quarter. *EM_09* is the discretionary accruals in the third quarter. Consistent with our prediction, the coefficient on the *SSR* is positive and significant at the 10% level, suggesting that the listed firms are more likely to manage the earnings downwards in the third quarter financial statements after the SSR. The coefficients of *EM_09* and the interaction item (*EM_09*SSR*) are significantly positive, indicating that financial analysts are implicitly guided by the firms' downward discretionary accruals in the third quarter financial statements, and this effect is more pronounced after the SSR.

4. Discussion

This study suggests that Chinese listed firms are more concerned about financial analysts' earnings forecasts after the SSR. This paper extends the literature related to the economic consequences of the SSR and adds to the literature of forecast walk-down induced by management guidance and the mechanisms that firms use to meet or beat analysts' earnings expectations, providing a new perspective of regulating the relationship between Chinese listed firms and financial analysts after the SSR. Moreover, the information environment and quality of analyst forecasts are worth discussing for further study.

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[1] We run the regression $EM\_09 = \alpha_0 + \alpha_1 SSR + Control\ Variables + Year\ FE + Industry\ FE + \varepsilon$, and obtain the positive coefficient on the SSR at the 10% significance level, suggesting that the listed firms are more likely to manage the earnings downwards in the third quarter financial statements after the SSR.

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Paper Number: MS0016

The Impact of Trade in Productive Services in the Asia Pacific Region on Regional Value Chain Participation - From the Perspective of Social Network

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The Impact of Trade in Productive Services in the Asia Pacific Region on Regional Value Chain Participation——From the Perspective of Social Network

Abstract

This paper selects the data of production services trade and added value of 20 countries (regions) in the Asia Pacific region from 2007 to 2018, and uses social network analysis to study the characteristics of production services trade network of countries (regions) in the Asia Pacific region from three dimensions of network centrality, network connection strength and network heterogeneity. The research shows that network centrality, network connection strength and network heterogeneity significantly improve the participation of its regional value chain, and maintain the above conclusions in the robustness and endogenous tests. At the same time, the research of this paper also shows that the network heterogeneity improves the participation of low-income countries in the regional value chain more than high-income countries. In the mechanism test, it is found that network centrality and network strength only have an impact on backward participation, while network heterogeneity has a significant positive impact on forward and backward participation, with a greater impact on forward participation index. The introduction of new value chain measurement methods in this study will help improve the accurate measurement of regional value chain and provide development suggestions for industrial development and regional coordination.

Keywords：Trade network, production and service industry, regional value chain

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Paper Number: MS0017

Why the World Economy may not Get More Globalization in the Post-pandemic Decade:Subnational Imported Covid-19 Cases and Foreign Antipathy on Social Media

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Why the World Economy may not Get More Globalization in the Post-pandemic Decade: Subnational Imported Covid-19 Cases and Foreign Antipathy on Social Media[1]

Extended Abstract

Premised on the assumption that societal threats affect individual's self-construal, the study proposes that de-globalization sentiments would rise among people with greater international exposure such that globalization paradoxically triggers de-globalization. By investigating a large dataset of social media posts in 2020 via the deep learning (DL) approach, the study has found that people resident in cities with more foreign imported COVID-19 cases would express stronger foreign antipathy. Given that the perception of the pandemic is a mixture of medical remedies and political manipulation, the foreign antipathy caused by globalization may become weaker when the focal city has better health care capabilities whereas stronger if the municipal political leader carries stronger ideological conservativeness.

Keyword: Pandemic, imported COVID-19 cases, foreign antipathy, social media, subnational contingencies, deep learning

1. Introduction

As the pandemic hits societies at a fragile moment (Wenzel, Stanske, & Lieberman, 2020), the economic implications and impacts of COVID-19 have become important topics in the management domain (Alekseev et al., 2021), with particular attention toward the reconfiguration of international trade and globalization (Verbeke, 2020). Optimists postulate that those turbulences caused by the pandemic are only marginal and temporal and the global economy will need more globalization that results in net-efficiency (Contractor, 2022; Verbeke, Coeurderoy, Matt, 2018), where globalization refers to the increasing economic interdependence across nations (Chase-Dunn, Kawano, & Brewer, 2000; Witt, 2019). However, pessimists counterargue that the pandemic has deteriorated inequalities thus fueled

[1] Updated on 23 August 2022

protectionism and de-globalization (Ciravegna & Michailova, 2022).

Given that the sustainability of globalization is one fundamental premise of international business (IB) studies, we engage in an exchange of scholarly conversation with the debate from a different view. Rather than speculating whether the poor (either workers or countries) triggers opportunities for or barriers of globalization, we argue that the pandemic fosters more de-globalization sentiments paradoxically among people who have greater globalization exposure. Premised on the assumption that the pandemic and other societal threats affect individuals' self-construal (Galoni, Carpenter, & Rao, 2020), we argue that people in cities with greater international exposure, who suffered most from the pandemic by foreign imported cases, would express stronger foreign antipathy that may hurt future IB interactions, insofar as those blames constitute a conduit to drain away their ontological insecurity (Campbell et al., 2020). However, they may present heterogeneous attitudes under different environmental contingencies, such that the institutional situations may affect the effects of international exposure on foreign antipathy.

China presents an ideal context to attest to the hypothesis. It is a representative outward-oriented emerging economy with one ruling party but varied international exposures across different regions (Li, Liu, & Qian, 2019), thus the findings would not be disturbed by any preexisted political partisanship (Benton et al., 2021). The Chinese government does not take any political stance to foreign countries either as it is one of the first countries that suffered from the pandemic. While many countries have adopted the policy of herd immunity, China is one among the few countries that carefully track imported COVID-19 cases, which provides a perfect data source. Given the broad usage of social media and the fact that user-generated content (UGC) can precisely capture the societal sentiments under the pandemic (Gour, Aggarwal, & Kumar, 2022), we traced all Weibo posts (i.e., Chinese Twitter) in 2020 that are about foreign countries under the pandemic theme across the first, second, and third-tier cities by checking the latitude and longitude information of the posts. While some may concern about the bias caused by the potential media censorship in emerging economies like China, few of them would put restraints on discussions about foreign countries (Rauchfleisch & Schäfer, 2015).

Invoked on the deep learning (DL) method, we have obtained the extent of negative sentiments toward foreign countries for each city each month. Based on this comprehensive dataset, we corroborated that people in cities confronted with more foreign imported COVID-19 cases would express stronger foreign antipathy, but local health care capabilities would alleviate the concerns and costs caused by imported cases thus weakening the baseline relationship. However, the effects become stronger when local politician has stronger ideological conservativeness toward globalization, captured by his or her age.

Overall, the study makes three major contributions. First, this study engages with and extends the scholarly debates between Contractor (2022) and Ciravegna & Michailova (2022) while introducing a new mechanism that helps explain the arisen trend of de-globalization while. In addition to the unsettled influences of inequalities and fragmentation, we unveil that globalization carries both benefits and costs for local citizens such that they paradoxically become advocators of de-globalization if suffer the most from the pandemic. This in turn reminds us that the pandemic triggers devastating societal impacts more than those direct economic turbulences. Second, the findings highlight that the perceived impacts of the pandemic are a mixture of various environmental influences. Heeding the recent call (Ru et al., 2021), we document that heterogenous institutional contingencies constitute crucial influencers underlying different responses to COVID-19 across different regions. In particular, we provide direct evidence that politicians, due to the ideological imprinting rather than partisanship (cf., Benton et al., 2021), play a significant role in the discourse of the pandemic. Third, we showcase new ways to handle social media data. Particularly, we have shown that the integration of techniques like application programming interface (API), natural language processing (NLP), location-based service (LBS), and DL can generate fine-grained data that helps predict institutional changes. The approach we have taken may present as methodological templates for future studies.

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Moving with the Times: Technology Adoption by Service Professionals

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Moving with the Times: Technology Adoption by Service Professionals

Extended Abstract

This study drew on the technology-organization-environment (TOE) model and self-determination theory (SDT) to investigate how perceived technology competence of the organization and top management support affect employees' satisfaction with technology adoption. We found that fulfillment of employees' competence and relatedness needs were mediating variables, and that autonomy need satisfaction had a moderating effect. Quantitative data from 594 professional service workers in UK were used to test the hypotheses. Qualitative data provided further support for the hypothesized model.

Keywords: Technology adoption, Professional service workers, Technology-organization-environment model, Self-determination theory

1. Introduction

Technologies are changing how organizations provide services and how employees interact with service recipients (Moffett et al., 2020; Yadav and Pavlou 2014, 2020). This has special importance within the professional service sector (Grewal et al., 2020a, 2020b). With key job characteristics such as being knowledge-intensive, tailoring-oriented, and interactive (Singh, Brady, Arnold, and Brown, 2017), professional service organizations rely on personnel with high levels of social and analytical skills, flexibility, and creative thinking to provide personalized and expertise-based services (Singh et al., 2017; Wirtz et al., 2018).

Professional service organizations are "at an inflection point" (Wirtz et al., 2018, p. 908) where they need to maintain service quality while facing the threat of disruption (Ostrom et al., 2015; Pemer, 2021; van Doorn et al., 2017). It has become necessary for them to keep abreast with the latest technologies in order to remain competitive and sufficiently innovative by extending their competencies and adopting new service delivery models (Barrett & Hinings, 2015). For example, providers of knowledge-intensive services are blending and augmenting traditional platforms and media with technology-supported facilities (Davenport & Kirby 2015; Keating et al., 2018; Pemer, 2021). While some are embracing a

relatively conservative, "bolt-on" approach vis-a-vis technology adoption, others are taking on a more proactive, "built-in" approach (Anand, Gardner, and Morris 2007). Either way, professional service organizations are abandoning a digitalization shielding approach (Susskind and Susskind 2015) by increasing their investment in new technologies and incorporating them into their operations (Grewal et al., 2020a). This may help them improve work processes, save labor costs, and better communicate and connect with customers, thereby creating new ways of making profits and increasing overall revenue (Grewal et al., 2020a).

Researchers have predicted that demand for the use of enhanced technology in professional service industries will keep increasing (Singh et al., 2017, Pemer, 2021). However, there is a lack of research on how professional service organizations address the psychological needs of their professional members when adopting new technologies. Therefore, in this study, we investigate two Research Questions: (1) How do these organizations motivate and facilitate employees' usage of new technologies? (2) How important is it that employees' psychological needs are satisfied in the process?

2. Literature and framework

2.1 Insights offered by the technology-organization-environment (TOE) model

The technology-organization-environment (TOE) model (Tornatzky & Fleisher, 1990) identifies contextual factors that influence technology adoption by organizations. Technology (T) refers to relevant systems, hardware and software that are available externally and/or within. Organization (O) comprises internal factors such as firm size, coordinating structures, communication processes, and resource availability. Environment (E) concerns industry characteristics, market structure, and characteristics of competitors and regulators. Reviewing the contents of TOE, we homed in on factors within T and O, pinpointing perceived technological competence of the organization and top management support (for technology adoption) as likely antecedents of employee satisfaction with technology adoption.

2.2. Self-determination theory

We drew on self-determination theory (SDT) (Ryan and Deci, 2002), for explanations of how perceived

technological competence of the organization and top management support may give rise to employees' overall satisfaction with the technology adoption, through increased levels of satisfaction of employees' intrinsic needs. SDT is a general motivation theory about how people achieve self-motivation and personality integration through stimulation of inherent growth tendencies, fulfillment of innate psychological needs, and conditions that foster positive psychological processes (Ryan and Deci, 2002). SDT assumes that people are naturally active and self-motivated and are eager to develop and grow toward their fullest potential (Deci and Ryan, 2008; Deci, Ryan, and William, 1996).

SDT emphasizes the importance of factors that boost energy levels by fulfilling psychological needs for autonomy, competence, and relatedness (Trougakos, Hideg, Cheng, and Beal, 2014). Autonomy needs are satisfied by having the choice to decide and initiate action by oneself (Ryan and Deci, 2002). Competency needs are satisfied when feeling that one is being effective during ongoing activities and interactions (Chiniara and Bentein, 2016; Deci and Ryan, 2000; Ryan and Deci, 2002). Relatedness needs are satisfied when one feels connected to others and has relationships characterized by caring for and being cared for by others (Chiniara and Bentein, 2016; Ryan and Deci, 2002). SDT holds that satisfying people's psychological needs enhances their vitality, builds optimal motivation, and leads to positive psychological, developmental, and behavioural outcomes (Deci and Ryan, 2000, 2008).

3. Methods and results

3.1. Participants and procedures

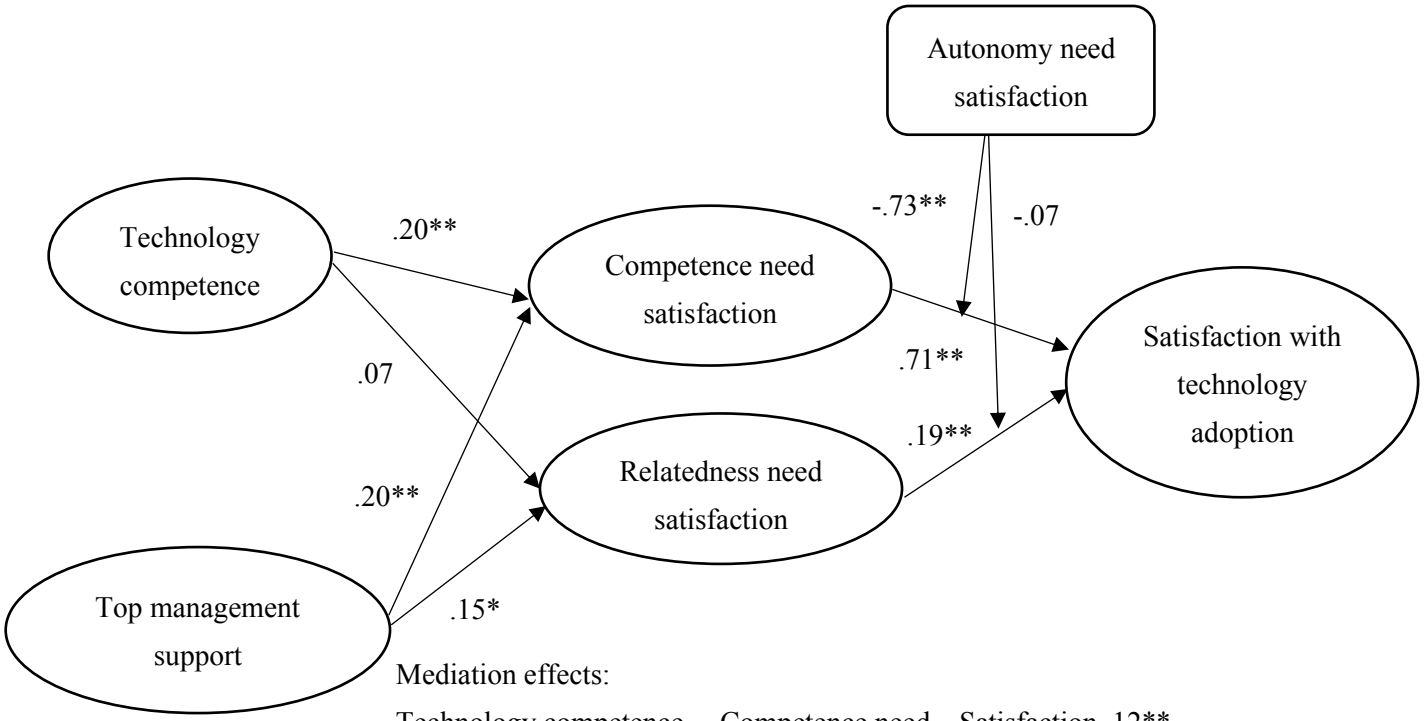
We recruited participants working in UK financial firms, insurance companies and universities through Prolific, the online sampling service company. We conducted three waves of questionnaire data collection with an interval of around four weeks between waves. Participants were given monetary incentives for their involvement. The wave 1 questionnaire included items about perceived technology competence of the organization, top management support, and participants' background information. A total of 910 participants completed the wave 1 questionnaire. Seventeen participants failed to pass the attention check and 3 participants did not fully input their prolific ID, resulting in 890 usable returns for wave 1. The wave 2 questionnaire, which included items about levels of satisfaction of employees'

needs for competence, relatedness, and autonomy and their satisfaction with technology adoption was released to the 890 participants, who had provided usable returns for wave 1. A total of 607 participants returned wave 2 questionnaires. Among the wave 1 returns, 5 failed to include the information to match wave 2 data, and 8 failed at attention checks, resulting in 594 cases that could be matched with the wave 2 returns. This represented a response rate of 66.74% of the 890 usable returns for wave 1. The wave 3 questionnaire comprised open questions about: the perceived impact of the industry environment and external factors on company's technology adoption; perceived drivers and inhibitors for organization-level technology adoption; and support or preparation received as an employee for technology adoption. The wave 3 questionnaire was released to the 594 participants who had provided usable wave 2 data, and they were invited to write a maximum of 200 words in response to each question. We obtained 252 responses, all usable, for wave 3.

3.2. Results

Figure 2 shows the results of the path estimates. They reveal that perceived technology competence of the organization and top management support were critical antecedents of the satisfaction of employees' competence needs which enhanced employees' satisfaction with technology adoption. Top management support relates to employees' relatedness need satisfaction, which further promoted employees' satisfaction with technology adoption. Competence need satisfaction mediated respectively the relationships between technology competence and satisfaction with technology adoption, and between top management support and satisfaction with technology adoption.

Figure 1. Path estimates of the hypothesized model



4. Discussion

The findings are generally consistent with our hypotheses. They suggest that although organizations may passively adopt technologies either for contingent plans (e.g., coping with the global pandemic, Tu et al., 2021) or for enhancing competitiveness, they can motivate employees' adoption. This is achieved by demonstrating the organization's technology competence and by manifesting top management support for technology adoption. Employees are more likely to feel overall satisfaction with technology adoption if their competence and relatedness needs are fulfilled in the process. However, technology adoption can entail a trade-off against employee autonomy. This trade-off may dampen employees' overall satisfaction with technology adoption unless it is carefully managed. We will provide some qualitative illustrations of how employees were afforded space for making choices in terms of technology adoption without detracting from service quality and efficiency.

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Book-Tax Relationships and IPOs: Evidence from China

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Book-Tax Relationships and IPOs: Evidence from China

Abstract

Initial Public Offering (IPO) is an interesting and unique setting to study corporate tax avoidance behaviors because a firm is changed from private to public and there are special managerial incentives involved in the IPO process. The costs and benefits of tax avoidance change accordingly during the period. Accounting research on IPO has focused on how firms engage in earnings management especially in the pre-IPO period and has largely ignored tax reporting issues. In this paper, we fill this gap in the literature and enhance our understanding of the rationale behind tax avoidance behaviors as they relate to IPO.

Keyword: Book-Tax Relationships, Corporate Tax Avoidance, Initial Public Offering.

I. Introduction

Tax avoidance is a significant problem for IPO firms in China. For example, Wei, Yi, Li and Wu (2018) find that IPO firms on average avoid taxes of RMB 34 million (or about US$5.39 million) prior to IPO. Anecdotal evidences also confirm the seriousness of tax avoidance by IPO firms in China and that shareholders of the newly issued shares (i.e. new investors) in particular need to be very concerned about their potential tax liability. Therefore, if we can better identify the tax avoidance behaviors related to IPO firms, capital market stakeholders will be able to make more informed decisions. For example, investors including international and institutional investors can better assess the value and cost of tax avoidance for the firm, the "real" after-tax profit and the overall reporting quality of the firm when making investment decisions. Tax authorities can better allocate their limited resources for tax audits. Regulators can formulate regulations to better protect the integrity of the IPO process.

II. Background Literature and Hypotheses

1. *IPO and Earnings Management*

Prior literature supports that managers in IPO firms have strong incentives to engage in earnings management to window dress its performance to pass the IPO screening process and to boost IPO offer price (e.g. Aharony, Lee and Wong, 2000; Cheng, Wang and Wei, 2015; Fan, 2007). For example, Cheng

et al. (2015) confirm that Chinese firms inflate their earnings for IPOs and that non-state owned enterprises (non-SOEs) inflate earnings to a greater degree. However, Tang, Mo and Chan (2017) show that even SOEs can also be actively engaged in tax avoidance because of intergovernmental agency conflicts.

2. *Tax Avoidance, the Book-Tax Tradeoff Theory and Book-Tax Relationships*

In Mills'(1998) classic article, the difference between pre-tax book income and taxable income (hereinafter book-tax difference or BTD) is shown to be significantly related to tax noncompliance, i.e. tax audit adjustments by tax authorities. That is, a large BTD will be a clear and ready signal for tax noncompliance. Since a firm's financial statements must be attached to its tax return for submission to the tax authorities, both tax authorities and external auditors are then likely to intervene when there is a large BTD (Chan, Luo and Mo, 2016). To reduce BTD, firms that want to avoid tax will need to lower their book income. However, a lower book income can generate a negative capital market effect and will likely be detrimental to the firm's ability to meet the requirements for listing. Also, research has shown that accounting earnings are positively associated with share prices. For example, Carpenter, Lu and Whitelaw (2017) find that stock prices in China are linked to firm fundamentals. Firms that want to manage their book income upward to meet profitability requirements and to boost share prices will likely need to pay more tax to maintain a reasonable level of BTD. Indeed, Erickson, Hanlon and Maydew (2004) find that some firms are willing to pay tax on earnings that do not exist. More recently, Lennox, Lisowsky and Pittman (2013) find that U.S. public firms that are aggressive in financial reporting are less tax aggressive. This is the basic thesis of the book-tax tradeoff theory.

The book-tax tradeoff theory posits that there is a limit to the extent that firms can simultaneously manage taxable income downward to avoid tax and book income upward to increase capital market benefits. Therefore, managers must make a tradeoff between the value of the expected tax savings through avoidance and the associated non-tax costs (e.g. capital market benefits foregone). This book-tax tradeoff theory was validated directly by Mills and Newberry (2001) using U.S data, and was also validated by Chan, Lin and Mo (2010), Chan, Lin and Tang (2013), and Chan, et al. (2016) using Chinese data. According to the book-tax tradeoff theory, there is likely be a negative relationship between financial reporting aggressiveness and tax reporting aggressiveness. This paper tests whether

and how this book-tax tradeoff theory may apply in an IPO context.

3. *Hypothesis Development*

For firms in the pre-IPO period, we hypothesize that aggressive upward earnings management will be accompanied by aggressive tax avoidance. This means that the book-tax tradeoff theory does not work in the pre-IPO period because in China tax audits are mainly conducted by the local tax bureaus under the control of the local government (Tang et al. 2017). Since having a listed company in the province can bring significant benefits to the province in terms of employment and future tax revenues, local governments are unlikely to enforce tax audits very strictly on pre-IPO firms in their respective province. Therefore, a large book-tax difference (BTD) may not be a problem for these pre-IPO firms. Many of these firms will find it advantageous to manage their earnings upward to gain capital market benefits and at the same time report a lower taxable income to save taxes.

For firms in the post-IPO period, we hypothesize that upward earnings management will constrain tax avoidance. This means that the book-tax tradeoff theory will be applicable in the post-IPO period because after IPO, as a public firm, management still needs to maintain an adequate level of accounting earnings to support share prices. Unlike the pre-IPO period, tax authorities will be very concerned about large BTD for these post-IPO firms as local governments need the tax revenues. Gaining listing status is no longer a concern for the local governments. They now want reliable tax reporting to reduce tax noncompliance.

Based on the above discussions, our hypothesis statements are as follows:

H1: In the pre-IPO period, more aggressive financial reporting via earnings management will be accompanied by more aggressive tax avoidance. In the post-IPO period, aggressive financial reporting will constrain tax avoidance.

H2: There will be a decrease in tax avoidance from the pre- to the post-IPO period.

III. Research Method

1. *Sample and Proxies*

The financial and IPO data are from the CSMAR databases. The main sample covers 2002 to 2019 IPOs. We use the traditional effective tax rate (*ETR*) as one measure of tax avoidance. We modify our ETR

by the applicable (statutory) tax rate (*ATR*) to become METR (= *ETR/ATR*). Similarly, our second measure of tax avoidance is the Cash ETR modified by ATR or MCETR. For these tax avoidance measures, a lower measure is indicative of a higher level of tax avoidance. We use discretionary accruals (*DAcc*) as our measure of earnings management (DeFond and Subramanyam, 1998).

2. *Regression Models*

To test our hypotheses, we use the following regression model.

$$Tax\text{-}Avo = \gamma_0 + \gamma_1 DAcc + \gamma_2 Post + \gamma_3 DAcc * Post + \gamma_4 Controls + \varepsilon \quad (1)$$

$$Tax\text{-}Avo = \gamma_0 + \gamma_1 DAcc + \gamma_2 Post + \gamma_3 Controls + \varepsilon, \quad (2)$$

where *Tax-Avo* is one of the tax avoidance measures stated above. *DAcc* is the measure for earnings management as explained above. *Post* = 1 for post-IPO observations. For control variables, we make reference to prior tax avoidance studies such as Tang, Mo and Chan (2017).

IV. Empirical Results and Discussions

Table 1 presents the results of the regression analyses of the models in Eq. (1) and (2). Columns (1) and (3) report the results for *METR*, while columns (2) and (4) report those for *MCETR*. As shown in columns (1) and (2), *DAcc* is negatively significant, suggesting that in the pre-IPO period, more aggressive financial reporting will be accompanied by more aggressive tax reporting. On the other hand, the coefficients of the interaction term, *DAcc*×*Post*, and the sum of the coefficients (*DAcc* + *DAcc* ×*Post*) are all positive and significant, which indicates that IPO firms' aggressive financial reporting constrains tax avoidance in the post-IPO period. In Column (3) and (4), the coefficient of *Post* is significantly positive. This shows that there is a decrease in tax avoidance from the pre- to the post-IPO period. These results support our H1 and H2.

. **TABLE 1**
Tax Aggressiveness (2-year Pre- vs 2-year Post-IPO Data)

Variables	***METR***	***MCETR***	***METR***	***MCETR***
	(1)	(2)	(3)	(4)
Post	0.1518***	0.1122***	0.1075***	0.1829**
	(10.328)	(4.215)	(2.643)	(2.204)
DAcc	-0.1915**	-0.4085**	-0.1223	-0.0384
	(-2.101)	(-2.536)	(-0.829)	(-0.143)
Post* × *DAcc	0.5480***	0.8223***		
	(5.530)	(5.246)		
RAM	-0.0159	0.0911**	-0.0186	0.1860**
	(-0.697)	(2.397)	(-0.447)	(2.360)
LEV	0.1909***	0.1302*	0.0777	-0.1226
	(4.151)	(1.661)	(0.807)	(-0.645)
LNTA	-0.0089	-0.0247*	0.0514	-0.1325**
	(-1.165)	(-1.899)	(1.551)	(-2.286)
ROA	0.3815**	-0.1687	0.7843***	-0.3536
	(2.318)	(-0.609)	(2.886)	(-0.680)
Growth	0.0182	-0.4460***	-0.0029	-0.3838***
	(0.476)	(-7.143)	(-0.050)	(-3.561)
INTAN	-0.0639	-0.2006	-0.6635**	-0.5139
	(-0.417)	(-0.849)	(-2.194)	(-0.923)
CAPINT	-0.0091	0.1745**	0.1236	0.2705
	(-0.180)	(2.146)	(1.107)	(1.238)
AGE	-0.0001	-0.0026	0.0082	0.0896
	(-0.049)	(-1.457)	(0.232)	(1.600)
SOE	0.0030	-0.0302	-0.0021	0.0496
	(0.144)	(-0.982)	(-0.013)	(0.176)
OCF	-0.1663	-0.3607	-0.2108	-0.4956
	(-1.144)	(-1.396)	(-1.015)	(-1.157)
Constant	0.9606***	1.4139***	-0.2533	3.7884***
	(6.178)	(5.301)	(-0.409)	(3.443)
Industry FE	Included	Included	Included	Included
Year FE	Included	Included	Included	Included
Observations	7,416	7,416	7,416	7,416
Adjusted R^2	0.182	0.161	0.226	0.130
H0: *DAcc* +(*DAcc* ×*Post*) = 0				
	0.3565***	0.4139*		
	(2.70)	(1.95)		

***, **, * Denote significance at the 1 percent, 5 percent, and 10 percent levels, respectively (two-tailed). Standard errors are clustered at the firm level.

This research identifies the magnitude and timing of tax avoidance associated with IPO transactions as well as the factors that will facilitate or constrain tax avoidance during the IPO process based on an established theory. This should provide an important framework for investors, analysts, tax authorities, auditors and others to predict and assess the implications for themselves as stakeholders of the IPO process.

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Paper Number: MS0020

Research on Consumers' Purchase Intention in the Farmer-assisted Live Streaming

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Research on consumers' purchase intention in the farmer-assisted live streaming

Abstract

Agricultural-assisted live broadcasting has become a major topic in China after the COVID-19 epidemic. In this paper, we investigate how platform and broadcaster features work together to affect customers' purchasing intentions. We discovered that platform reputation moderates the relationship between broadcaster expertise and customer trust. Additionally, consumer trust mediates the association between consumer purchase intent and the broadcaster's competence.

Keywords: Broadcasters' expertise, consumer trust, platform reputation, agriculture-assisted live streaming

1.Introduction

Since 2020, the development of the Chinese consumer market has been hampered by the impact of the epidemic, where the sale of agricultural products has also been hit (Hung, 2021). At the same time, the effect of the epidemic has led to a significant change in the way public shops and online shopping expanded rapidly during the epidemic (Moon, Choe, & Song, 2021). Among them, live streaming media are widely popular due to their instant and high-intensity interaction mode. To fill the gap in previous studies, this study assumes that the professionalism of broadcasters has a positive impact on consumer behavior in live broadcasts. In addition, consumers' trust in the platform plays an intermediary role between the professional knowledge of broadcasters and consumers' purchase intention. Moreover, the platform's reputation also mediates the relationship between broadcasters' expertise and consumers' trust in the platform.

2 Literature and framework

This article proposes four hypotheses. Professional broadcasters output high-quality information through interactions with consumers in live streaming and release a large number of professional signals to consumers. In addition, broadcasters professionally explain the

products sold, which improves the effectiveness of agriculture-assisted live streaming. Whether the consumer absorbs the broadcaster's information affects their willingness to buy, impacting their desire to consume (Syvertsen, 2004). The higher the expertise of the source in the consumers' perception system, the more considerable the reliability of the information disseminated by the head, and the greater the influence on the consumer as a recipient of the data (Park & Kim, 2021). This influence may deepen consumers' favorable perceptions of the live broadcast or the product and accelerate their purchase decisions.

Hypothesis 1: Broadcasters' expertise positively relates to consumers' purchase intention.

Hypothesis 2: Consumers' trust in the platform mediates the relationship between broadcasters' expertise and consumers' purchase intention.

Hypothesis 3: Platform reputation moderates the relationship between broadcasters' expertise and consumers' trust in a platform such that the relationship is more robust when platform reputation is higher.

Hypothesis 4: Platform reputation moderates the mediating effect of consumers' trust in the platform on the relationship between broadcasters' expertise and consumers' purchase intention. The mediating product is stronger when the platform's reputation is higher.

3. Method

Data used in this study were collected through the snowball sampling method through personal relationships. A total of 261 questionnaires were distributed, and all usable surveys were returned. To ensure the reliability of the data sources, we collected data about participants'

gender, age, education, and monthly salary.

As shown in Table 1, broadcasters' expertise was positively related to consumers' trust ($r=0.14$, $p<0.05$) and to purchase intention ($r=0.15$, $p<0.05$). The results are presented in Table 2. Hypothesis 1 proposed that broadcasters' expertise is positively related to consumers' purchase intention. In Model 2, broadcasters' expertise was positively related to consumers' purchase intention ($\beta=0.20$, $p<0.01$). Thus, Hypothesis 1 is supported. As shown in Figure 2, broadcaster expertise is significantly related to consumer trust ($b = 0.68$, $t = 5.05$, $p < 0.01$) when platform reputation is high but non-significant ($b = 0.09$, $t = 0.79$, n.s.) when platform reputation is low. Thus, Hypothesis 2 and 3 is supported. According to values for moderators being the mean and plus/minus one SD from the mean, the degree of platform reputation at low, middle and high levels was distinguished. The conditional indirect effect of platform reputation on broadcasters' expertise and consumers' purchase intention through consumers' trust are shown at the bottom of Table 3.Thus,Hypothesis 4 is supported.

4. Discussion

According to our findings, broadcaster expertise, customer trust, and platform reputation are favorably related to consumer buy propensity. In addition, we demonstrate that the reputation of the platform moderates the relationship between broadcaster expertise and customer trust in the platform. Our study makes three contributions to the study. First. Direct agricultural broadcasting is vital to the development of society as a whole, rural agriculture in particular, and farmers. Secondly, this study identifies the importance of customer trust as a mediator between the expertise of broadcasters and consumer trust. Thirdly, this study identifies that the promotion of consumer behavior in agricultural-assisted live streaming may hinge on

creating trust between audiences and broadcasters.

Table 1 Descriptive Statistics and Correlations

	Mean	*SD*	1	2	3	4	5	6	7	8
1. Expertise		1.04	--							
2. Consumer		1.57	0.14*	--						
3. Platform		1.45	−0.25**		--					
4. Purchase		1.61	0.15*			--				
5. Gender		0.50	0.06	−0.05	−0.01	−0.	--			
6. Age		7.25	−0.04	−0.05	0.14*	−0.	−0.13*	--		
7. Salary		0.95	0.24**	−0.03	−0.28**	−0.	−0.01	−0.18**	--	
8. Education		0.78	0.14*	−0.04	−0.06	−0.	−0.04	−0.06	−0.02	--

Notes. $N = 261$.

Gender: 0 = male, 1 = female.

Education: 1 = three-year college or below, 2 = bachelor, 3 = master or above

* $p < 0.05$; ** $p < 0.01$.

Table 2 Results of Hierarchical Multiple Regression

Variables	Consumer trust			Purchase intention		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Control variables						
Gender	−0.07	−0.08	−0.06	−0.14*	−0.15*	−0.12*
Age	−0.07	−0.10	−0.11	−0.11	−0.11	−0.08
Salary	−0.04	−0.02	−0.02	−0.04	−0.09	−0.06
Education	−0.05	−0.06	−0.04	−0.13*	−0.16*	−0.13*
Independent variable						
Broadcaster expertise		0.22**	0.26**		0.20**	0.14*
Mediator						
Consumer trust						0.40**
Moderator						
Platform reputation		0.31**	0.25**			
Interaction						
Broadcaster expertise × consumer trust			0.23**			
R^2	0.01	0.12	0.16	0.04	0.08	0.23
ΔF	0.62	15.01	13.01	2.53	10.00	48.62

Notes. $N = 261$.

* $p < 0.05$; ** $p < 0.01$.

The regression coefficients in the table are all standardized regression coefficients. Owing to space considerations, the beta values of dummy variables for industries are not reported here but are available from the authors upon request.

Table 3 Moderated Mediation Analysis Examining the Impact of Platform Reputation on the Relationship between Broadcasters' Expertise and Consumers' Purchase Intention with Consumers' Trust as a Moderator

Predictor	*ß*	SE	*t*	LLCI	ULCI
Outcome: Consumer trust					
Constant	4.60	0.58	7.90**	3.45	5.74
Broadcaster expertise	0.38	0.09	4.06**	0.20	0.57
Platform reputation	0.27	0.07	3.98**	0.14	0.41
Broadcaster expertise × platform reputation	0.20	0.06	3.61**	0.09	0.32
Outcome: Purchase intention					
Constant	3.66	0.63	5.75**	2.41	4.91
Broadcaster expertise	0.22	0.09	2.34*	0.03	0.40
Consumer trust	0.41	0.06	6.97**	0.29	0.53
Conditional bootstrap estimates for consumer trust					
Platform reputation	Effect	Boot SE	Boot LLCI	Boot ULCI	
−1 *SD*	0.04	0.05	−0.05	0.13	
Mean	0.16	0.05	0.06	0.27	
+1 *SD*	0.28	0.08	0.14	0.44	

Notes: Bootstrap sample size = 5000

The level of confidence for all confidence intervals is 95%.

LL = Lower limit; CI = Confidence interval; UL = Upper limit.

N = 261. * p < 0.05; ** p <0.01

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Paper Number: MS0021

Internationalization of Industrial Marketers from Emerging Markets: Branding Capability, Firm-specific and Country-specific advantages

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Internationalization of industrial marketers from emerging markets: branding capability, firm-specific and country-specific advantages

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Abstract

This research aims to explain how latecomer industrial SMEs can internationalize by developing branding capability in the industrial upgrade of manufacturing, overcoming liabilities of smallness, foreignness, and outsidership. Using 487 data in a survey study, we found branding capability positively influenced international performance. Firm-specific and country-specific advantages benefited the development of branding capability. Branding capability reflects the resource recombination and orchestration activities that are necessary for international expansion of latecomer industrial SMEs, and precisely manifests the process of overcoming liabilities of smallness, foreignness, and outsidership, that are largely derived from resource-constraint limitations.

Keyword: Branding capability; OBM; SME internationalization; Industrial branding

1. Introduction

There has recently been a notable rise in the number of emerging-market industrial small and medium-sized enterprises (SMEs) that have managed to upgrade their operations. Evolving from original equipment manufacturing (OEM) into value-added original or own brand manufacturing (OBM) in such firms represents a specific process of internationalization (Eng & Spickett-Jones, 2009). The OEM-OBM upgrade requires development of a firm's own brand. In this respect, the extant literature points out that emerging-market industrial marketers (latecomers) have developed some marketing capabilities, of which branding has been identified as one of the most important. However, current scant studies suffer from a major limitation – no studies have empirically validated the role of branding capability in an latecomer industrial SME's industrial upgrade, which has the potential to limit research contribution in the field of international marketing and branding.

Considering the critical role of latecomer industrial SMEs in the global value chain, this research aims to explain how latecomer industrial SMEs can internationalize by developing branding capability. Upgrading from OEM to value-enhanced OBM involves the recombination and reconfiguration of key resources and capabilities (Eng & Spickett-Jones, 2009), with the goal of achieving new types of competitive advantage (i.e., capabilities). In light of this, this research frames the investigation within the resource-based view (RBV) and dynamic capabilities perspective, and introduces a construct of branding capability to capture a firm's ability to develop and leverage brands, that will drive the development of business relationships, enhance market legitimacy, and attain inimitable intangible assets in the firm (Brodie, Benson-Rea, & Medlin, 2017), overcoming liabilities of outsidership, foreignness, and smallness, with a view to enhancing firm performance in international markets. Our literature review revealed particularly significant roles for country-specific and firm-specific advantages as specific resources and capabilities that support branding capability, driving superior performance among these firms. International performance is taken as the outcome of a firm's branding efforts, and is defined as the extent to which

a firm achieves its financial goals in international markets, in terms of maximizing profitability, market share, and return on investment.

2. Theoretical Background, Hypotheses Development, Methodology

In this article, branding capability is conceptualized with two key dimensions – branding resource mobilization and orchestrated branding. Branding resource mobilization (i.e., planning and organizing for capability configurations around the brand) and orchestrated branding (i.e., integrating and exploiting capability configurations around the brand) are two notions adopted from the resource orchestration logic (RO) (Sirmon, Hitt, & Ireland, 2007), providing insight on how resources (and capabilities) are used for firm competitiveness.

In line with existing research that identifies positive effects of firm-specific and country-specific advantages on resource-constrained emerging-market SME internationalization (Yaprak, Yosun, & Cetindamar, 2018), we posit that firm-specific advantages (FSAs) as well as country-specific advantages (CSAs) may give rise to the development of branding capability for internationalizing industrial SMEs from emerging markets, and thus explain improved firm performance in international markets. CSAs emphasize knowledge sharing within industrial clusters, which generally refer to "geographical concentrations of industries that gain performance advantages through co-location" (Doeringer & Terkla, 1995, p. 225). The extant literature also suggests that firms originating from emerging markets possess unique FSAs, assisting them to more successfully undertake internationalization. These FSAs are largely knowledge-based, and are seen as proprietary to the firm, reflecting management competencies and marketing skills, such as organizational culture (e.g., international entrepreneurial orientation), customer-centered innovation and state-of-the-art marketing capabilities (e.g., social media capability), innovative capabilities and learning capabilities (e.g., absorptive capacity), and brands (Adarkwah & Malonaes, 2020; Rugman & Verbeke, 2003). Based on this discussion, we propose that CSAs (industrial clusters)

as well as FSAs (international entrepreneurial orientation, absorptive capacity, social media capability) may catalyze the development of branding capability, ameliorating liabilities of smallness, foreignness, and outsidership for more successful international expansion.

Hypothesis 1. International entrepreneurial orientation is a positive antecedent of branding capability.

Hypothesis 2. Social media capability is a positive antecedent of branding capability.

Hypothesis 3. Absorptive capacity is a positive antecedent of branding capability.

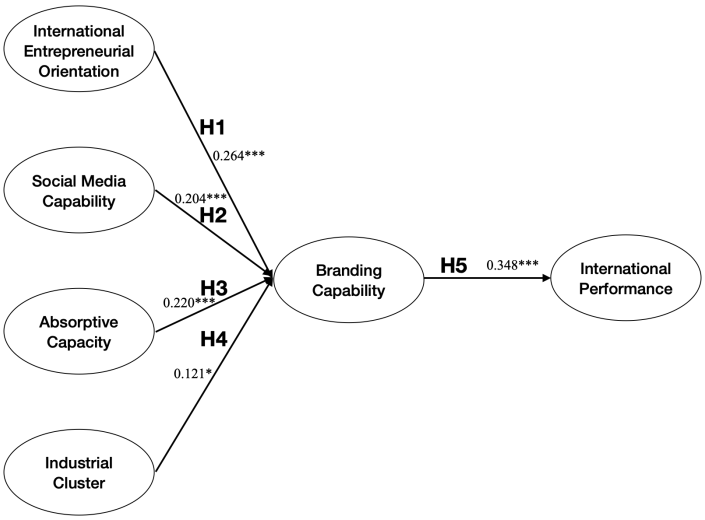
Hypothesis 4. Location within industrial clusters is a positive antecedent of branding capability.

Strong brands grant a firm the ability to charge price premiums, which translate into an immediate effect on the firm's profits (Mudambi, Doyle, & Wong, 1997). The underlying assumption is that branding efforts assist firms to locate resources on opportunities to reap extraordinary profits.

Hypothesis 5. Branding capability positively relates to international performance.

For the study purpose, Taiwan was chosen as the research context, representing a typical case that exemplifies the industrial development path of more-established emerging markets, namely, transformation from OEM to OBM (Eng & Spickett-Jones, 2009). We adopted a survey study for empirical support. The surveyed firms were accessed through the auspices of an industrial association in Taiwan. All participating firms belong to the manufacturing sector, operate B2B businesses, have greater than 50 employees, and have been in existence for at least 11 years since the establishment. Founders, CEOs, chief marketing executives, and branding executives were surveyed face-to-face, in the form of a pencil and paper questionnaire, by a research team of 20 members, during July and November, 2019. Key informants were asked to fill out the questionnaire with information for up to three of the most important foreign markets where they ran businesses using their own brands. Altogether, 186 firms

participated, generating 487 valid sets of data, which were subsequently used for analysis. The measurement items were generally adopted from the literature. Using SEM, the statistical results supported all the hypotheses.



3. Conclusion and Discussion

This study presents a pioneering effort to explore the role of branding capability in the internationalizing small and medium-sized industrial brand marketers from emerging markets. Theoretically, this paper is the first attempt to empirically validate the suggestion that branding capability can help overcome disadvantages (liabilities of smallness, foreignness, and outsidership) characterizing the internationalization of smaller brand marketers from emerging markets. Further, this research contributes to the industrial branding literature by providing the first empirical evidence that firm-specific and country-specific advantages can benefit the development of branding capability for internationalizing smaller industrial brand marketers from emerging markets. Managerially, branding plays an equally significant role in latecomer industrial SME internationalization as it does in large MNEs from developed countries. Thus, it becomes critically important for managers to develop branding capability when venturing into global competition. Importantly, the influence of branding capability is also likely to apply in other more-established emerging markets (e.g., South Korea and China) as well as less-developed emerging markets (e.g., Vietnam, Thailand, Malaysia, Indonesia). The increasing industrialization and continuing

economic development of an emerging market propels it towards becoming a more-established emerging economy, whose industry is likely to follow the path of transformation from contract-based manufacturers to own-brand marketers. As a result, these new brand marketers will find branding and the related resources and capabilities critical when venturing into international markets.

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Paper Number: MS0022

Managerial Voice Endorsement of Subordinate's Coalition Voice Tactics: The Moderating Role of Performance History

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Managerial Voice Endorsement of Subordinate's Coalition Voice Tactics: The Moderating Role of Performance History

Extended Abstract

This study focused on the supervisor's voice endorsement of the subordinate's coalition voice tactics. According to the attribution theory, I proposed that coalition voice tactic with a skip-level supervisor (vs. peers) is negatively related to voice endorsement via making the supervisors perceive more fear of losing power. Moreover, drawing from the social dominance theory, the negative relationship will be stronger when the subordinate's performance history is superior. A scenario-based experimental study conducted in China provided evidence for all of the hypotheses.

Keywords: Voice; Coalition; Power; Performance History

1. Introduction

Employees are expected to be proactive in the context of rising complexity, uncertainty, and dynamism in the workplace due to the COVID-19 pandemic (Grant & Ashford, 2008). Employee voice, which is conceptualized as discretionary expression of ideas, suggestions, or opinions on work-related issues with the purpose of changing the status quo (Detert & Burris, 2007), is believed to be one of the most significant ways to demonstrate proactivity at work (Parker & Collins, 2010). Since voice scholars have proven that voice is instrumentally valuable for organizations and work units' performance (e.g., MacKenzie, Podsakoff, & Podsakoff, 2011; Li, Liao, Tangirala, & Firth, 2017), supervisors frequently respond positively to the voicers because of their contributions to improving the organizational

effectiveness (e.g., Whiting, Maynes, Podsakoff, & Podsakoff, 2012). However, due to its challenging characteristic, a subordinate's voice may also be perceived as threatening behavior by the supervisor, resulting in negative consequences (e.g., Burris, 2012; Fast, Burris, & Bartel, 2014). Indeed, voice literature has demonstrated that the voicer's choices of tactics have a significant impact on the supervisor's evaluation (Morrison, 2011). For instance, Lam, Lee, & Sui (2019) argued that supervisors are more likely to endorse the voice if the subordinate expresses the idea more directly and politely. Nevertheless, what has been overlooked in voice tactics is the coalition tactic (Dutton & Ashford, 1993). Coalition tactic is frequently used in upward communication (e.g., voice) rather than downward (Yukl & Tracey, 1992), because individuals who only have limited role in the hierarchy (e.g., subordinates) require forming a coalition to alleviate the psychological unsafety generated by the power discrepancy (Walter, Kellermanns, & Lechner, 2012). I propose that the supervisors are less likely to endorse voice if the subordinates have formed coalition with a skip-level supervisor because they may be threatened by the tactic and fear losing their current control of power. Moreover, drawing upon social dominance theory (Sidanius & Pratto, 2001), I argue that a subordinate's performance history moderates the relationship between the coalition tactics and fear of losing power. My hypothesized model is depicted in Figure 1.

2. Literature and Framework

2.1. Voice Tactics and the Fear of Losing Power

As one of the upward influence tactics, coalition is defined as enlisting the support of others (e.g., skip-level supervisors or peers) to back up requests and influence the target to do what the agent wants (Schriesheim & Hinkin, 1990). However, when subordinates utilize coalition tactic, they intend to

pressure the supervisor to agree with the requests and undermine his/her authority, or power in decision-making at the same time (Clarke, Alshenalfi, & Garavan., 2019), and the tactic may be viewed as "an attempt to gang up on him/her" by the supervisor (Lee, Han, Cheong, Kim, & Yun, 2017). Hence, drawing from the attribution theory (Green & Mitchell, 1979), the receiver of voice (e.g., the supervisor) may feel frightened (Burris, 2012), and is more likely to attribute the voicer to a potential source of threat to his/her position. In particular, the fear of losing authority will be considerably great if the subordinate had built a coalition with a skip-level supervisor rather than peers before speaking up because the coalition tactic of voice indicates criticisms of the supervisor's incompetence, and the skip-level supervisors have the authority to fire, demote or "promote" them to positions where they cannot actually influence the organization (Wisse, Rus, Keller, & Sleebos, 2019). Based on the above reasoning, it is hypothesized:

Hypothesis 1: Coalition voice tactic with a skip-level supervisor (vs. peers) will be more positively related to the supervisor's fear of losing power.

2.2 The moderating role of Performance History

The extant studies in voice have revealed that voicer-related factors are important antecedents of voice endorsement (see a review in Kim, Lam, Oh, & Sohn, 2022). According to the information-processing model, subordinate's performance history is supposed to be one of the most salient factors when the supervisor evaluates their behaviors (Fukami, & Hopkins, 1993). Traditionally, superior performance history is more likely to be attributed to high competence (Grant, Parker, Collins, 2009), and ideas expressed by competent subordinates are associated with voice endorsement (McClean, Kim, Martinez, 2022). However, following social dominance theory (Sidanius & Pratto, 2001), generally, in comparison

to subordinate groups, supervisor groups have more authority and access to resources and advantages. The subordinates who have a superior performance history may have more opportunities to accumulate more resources than they should have acquired. In other words, superior performance history may blur the boundary line between subordinate groups and supervisor groups, thereby, the supervisors may be more likely to perceive themselves to be replaced later if the subordinate with superior performance history had built coalition with a skip-level supervisor (Khan, Moss, Quratulain, & Hameed, 2018). Hence, I posit the following hypothesis:

Hypothesis 2: *The positive relationship between coalition voice tactic with a skip-level supervisor and the supervisor's fear of losing power is stronger when the subordinate's performance history is superior (vs. average).*

2.3 The Indirect Effect of Voice Tactic on the Voice Endorsement

Existing voice studies have found that supervisor's perceived threat is less likely to induce voice endorsement (e.g., Burris, 2012). Hence, I contend that when the supervisors feel a potential power loss, they will respond defensively to it (Lam et al., 2019). Furthermore, combining this assumption with hypothesis 1, it is hypothesized that:

Hypothesis 3: Subordinate's coalition voice tactic with a skip-level supervisor is more negatively related to voice endorsement (via supervisor's fear of losing power).

As proposed in hypothesis 2, I argue that the performance history will potentially strengthen the negative relationship between subordinate's coalition voice tactic with skip-level supervisor and voice endorsement (via fear of losing power).

Hypothesis 4: Coalition voice tactic with a skip-level supervisor is more negatively related to

voice endorsement (via fear of losing power) when the subordinate's performance history is superior (vs. average).

3. Method and Results

3.1 Sampling, Design, and Measures

I performed a scenario-based experimental study using a 2 × 2 between-subjects design with varying voice tactics and performance history. Based on Isaakyan, Sherf, Tangirala, & Guenter (2021), I developed two scenarios, (1) coalition voice tactic with peers and (2) coalition voice tactic with a skip-level supervisor, and the voicer's performance history is either average or superior. I recruited 99 participants via a Chinese online survey platform. Of all participants, the average age was 36.21 years old (SD = 9.87), 63.6% were female, and 72.7% had a bachelor's degree or higher. I measured fear of losing power by using a three-item scale (α = .72) developed by Wisse et al. (2019) and used three items (α = .84) adapted from Burris (2012) to measure the voice endorsement. Both of the scales were seven-point Likert-type measure ranging from 1(*strongly disagree*) to 7 (*strongly agree*).

3.2 Manipulation Check

The participants were required to answer a four-item measure to check the efficacy of my manipulation of voice tactics and performance history. The results showed that the participants in the coalition tactic with a skip-level supervisor condition scored higher (M = 5.62, SD = 1.77) than the participants in the coalition tactic with peers' condition (M = 3.36, SD = 1.94) (t = 6.02, p < .01, d = 1.85) , and the participants in the average performance history condition (M = 2.69, SD = 1.77) rated lower than the participants in the superior performance history condition (M = 5.90, SD = 1.50) (t = -9.71, p < .01, d = 1.64). These results proved the effectiveness of my manipulation.

3.3 Results

Table 1 displays descriptive statistics and correlations of core concepts. Table 2 are the results of the multiple regression analysis. Based on Table 2, the relationship between coalition tactic with a skip-level supervisor (vs. peers) and the supervisor's fear of losing power was significant (B = 1.07, *SE* = .31, $p < .01$), supporting hypothesis 1, and the effect of the interaction of coalition tactics and performance history on fear of losing power was also significant (B = 1.34, *SE* = .61, $p < .05$), which means the hypothesis 2 was also supported. Next, I used the SPSS PROCESS macro (Model 4) to test the mediation effect, the result of the indirect effect (B = -.29, *SE* = .14, 95% CI : [-.59, -.05]) was significant, hence hypothesis 3 was supported. Finally, I examined the moderated-mediation model using the SPSS PROCESS macro (Model 7), and the results which are displayed in Table 3 supported hypothesis 4 (B = -.36, *SE* = .22, 95% CI : [-.86, -.01]), and the mediation effect of fear of losing power on the relationship between subordinate's coalition voice tactic and voice endorsement was significant for the subordinates with superior performance history (B = -.45, *SE* = .21, 95% CI: [-.91, -.09]) rather than those with average performance history (B = -.10, *SE* = .12, 95% CI: [-.35, .14]). Figure 2 illustrates the chart of the interaction.

4. Conclusion

This study proved that the subordinate's coalition voice tactic has a positive impact on the supervisor's fear of losing power, which is less likely to predict voice endorsement, and the negative influence on voice endorsement is stronger when the subordinate's performance history is superior rather than average.

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Figure 1: Hypothesized Model

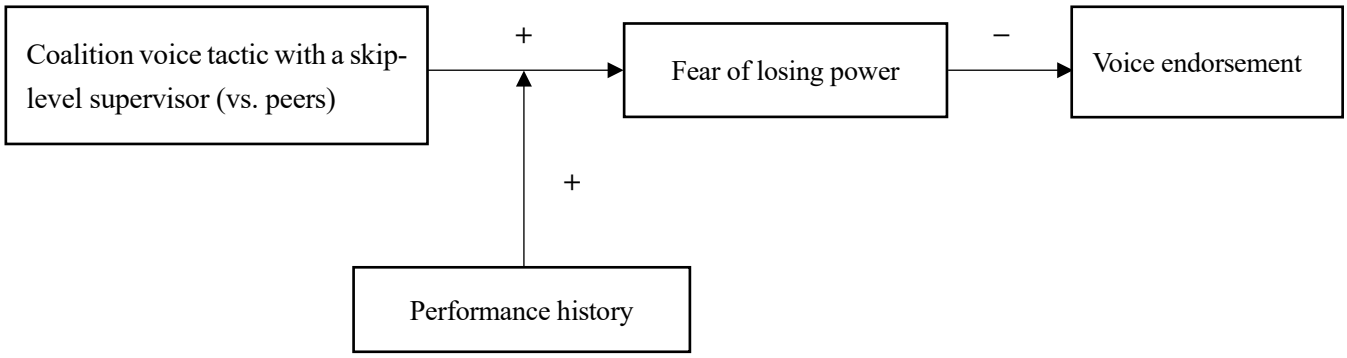


Table 1: Descriptive Statistics and Correlations among Variables

	Variable	*M*	*SD*	1	2	3
1	Coalition tactics[a]	.47	.50			
2	Performance history[b]	.49	.50	.09		
3	Fear of losing power	4.00	1.63	.33**	.13	
4	Voice endorsement	4.43	1.56	−.23*	−.04	−.32**

Note: N =99.

[a] coalition with peers =0, coalition with a skip-level supervisor =1; [b] average =0, superior =1.

** $p < .01$, * $p < .05$

Table 2: Regression Analysis Results

Dependent Variable	Fear of Losing Power			Voice Endorsement	
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**
Variables	***B* (*SE*)**	***B* (*SE*)**	***B* (*SE*)**	***B* (*SE*)**	***B* (*SE*)**
Constant	3.50** (.21)	3.36** (.26)	3.98** (.15)	4.76** (.22)	5.70** (.41)
Voice tactics[a]	1.07** (.31)	1.04** (.31)	1.03** (.31)	−.73* (.31)	−.44 (.32)
Performance history[b]		.32 (.31)	.32 (.31)		
Voice tactics × Performance history			1.34* (.61)		
Fear of losing power					−.27** (.10)
R^2	.11	.12	.16	.05	.12
ΔR^2		.01	.04		.07

Note: $N = 99$.

[a] coalition with peers =0, coalition with skip-level supervisors =1; [b] average =0, superior =1.

Unstandardized regression coefficients are presented with standard errors in parentheses.

** $p < .01$, * $p < .05$

Table 3: Indirect Effect of Coalition tactics on Voice endorsement via Fear of losing power by Performance history

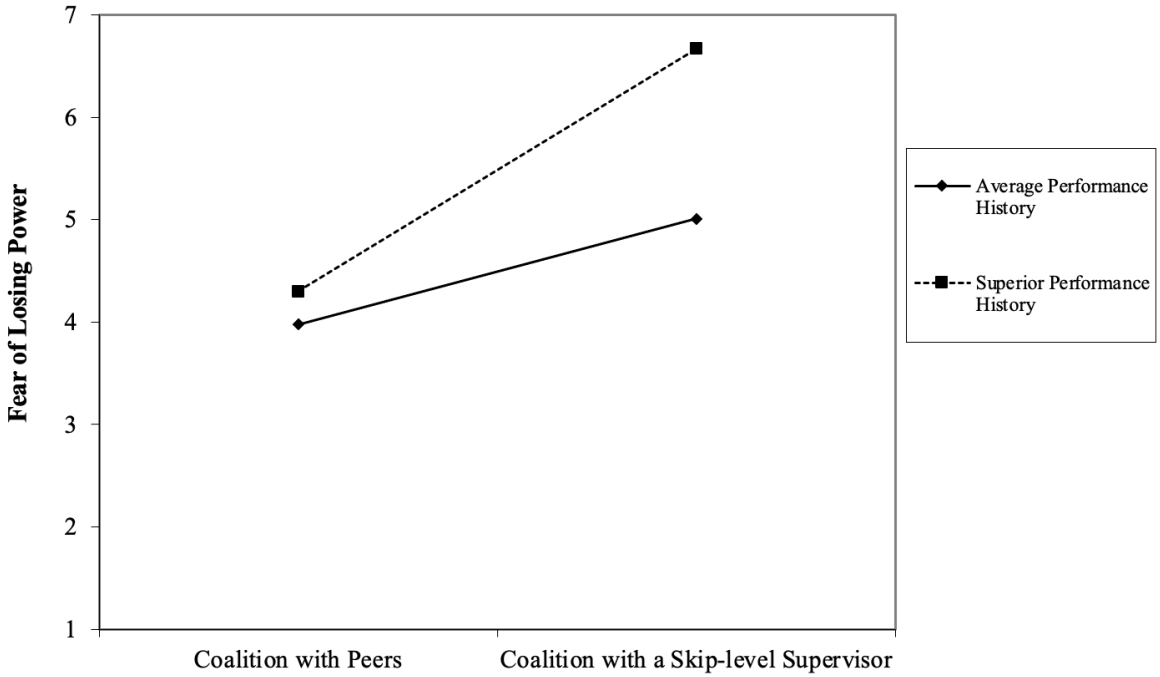
via Fear of Losing Power			
	Indirect Effect	***SE***	**95% CI**
Average (Low condition)	−.10	.12	[−.35, .14]
Superior (High condition)	−.45	.21	[–.91, –.09]
Index of moderated mediation	−.36	.22	[–.86, –.01]

Note: CI: confidence interval.

Lower limit and upper limit are reflected in parentheses.

The CIs of the indirect paths are based on 5,000 bootstraps.

Figure 2: Interaction of Coalition Tactics and Performance History on Fear of Losing Power



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Perceived Enjoyment and Subscription of Video on Demand:

The Moderating Roles of Trialability and Social Influence

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Perceived Enjoyment and Subscription of Video on Demand: The Moderating Roles of Trialability and Social Influence

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ABSTRACT

This study adopts Technology Acceptance Model (TAM) to examine the influence of perceived enjoyment on the attitude toward Subscription Video-On-Demand (SVOD) and consequently on intention to subscribe. We identify moderating variables (i.e., trialability and social influence) drew from Diffusion of Innovation Theory and Theory of Reasoned Action respectively. The findings revealed that perceived enjoyment is positively related to attitude toward SVOD, which consequently has a positive impact upon the intention to subscribe. Moreover, trialability strengthens the relationship between attitude and intention to subscribe, while social influence negatively moderates the relationship between attitude and intention to subscribe. The findings have important implications for managerial decisions on the video on demand marketing strategies.

Keywords: Subscription Video on Demand, Technology acceptance model, Perceived Enjoyment, Trialability, Social Influence

1. INTRODUCTION

1.1 Background and Significance of the Problem

The expansion of subscription video on demand or "SVOD" services trend has shaped the landscape in the entertainment technology industries since 2010, SVOD is video on demand services that

require users' to subscribe for access to premium video content. In order to provide a more comprehensive perspective, we adopt Technology Acceptance Model (TAM) (Davis, 1989) to explain customers' acceptance of SVOD.

The Technology Acceptance Model (TAM) is one of the most broadly used models for technology acceptance in information systems. (King and He, 2006), However, the TAM model does not include the subjective norms to verify the intention to use (Bagozzi, 2007; Legris, 2003). Furthermore, Diffusion of Innovation Theory suggests that trialability also influences the intention to use new technology (Lee et al., 2011). Based on these, this study adopted TAM and introduce social Influence and trialability from the Diffusion of Innovation Theory as the moderators to strengthen the TAM.

2. HYPOTHESES DEVELOPMENT

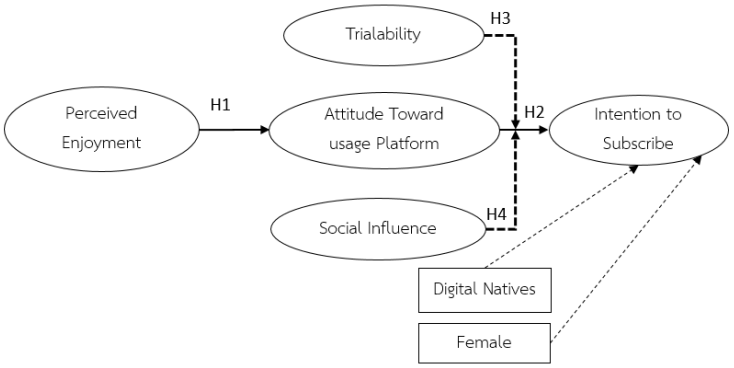


Figure 1 Research Framework

This model represents the linkage between related theories which are TAM, Diffusion of Innovation, and Social Influence. Based on TAM, perceived enjoyment will lead to the attitude towards SVOD platform which in turn will impact the intention to subscribe to video on demand. Social influence drawing from the Theory of Reasoned Action and trialability drawing from Diffusion of Innovation theory are argued to foster the intention to subscribe to video on demand. The hypotheses are as followed.

H_1: Perceived Enjoyment (PE) will have a positive relationship with the Attitude towards usage(AT).

H_2: Attitude towards Usage (AT) will have a positive relationship with the Intention to Subscribe(IS).

H_3: The relationship between Attitude toward usage(AT) and Intention to Subscribe(IS) will be stronger with Trialability (TA)

H_4: The relationship between Attitude toward Usage Platform (AT) and Intention to Subscribe (IS) will be stronger with Social Influence (SI)

3. METHODOLOGY

This study collected data from 431 respondents (301 usable responses). The data was then analyzed with Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) to test the hypotheses. To test the moderating effects, this paper followed Soontornthum et al. (2020).

4. ANALYSIS AND RESULTS

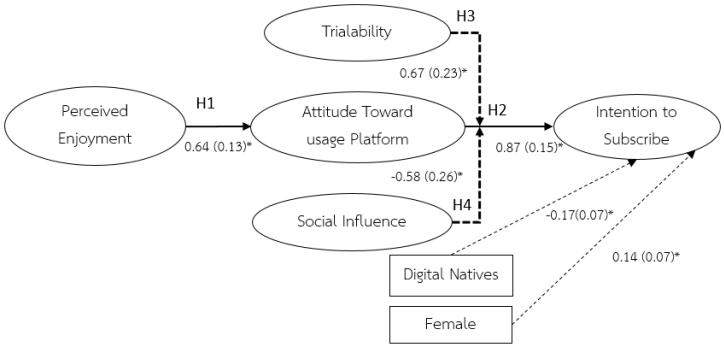
Measurement Model

The measurement model was validated with confirmatory factor analysis (CFA), and the model provided a good fit with overall data (χ^2 = 158.169, df =80, p = 0.00 , χ^2/df = 1.977, RMSEA = 0.057, CFI = 0.964, TLI = 0.953, SRMR = 0.04). All standardized factor loading was significant and greater than 0.5.

Hypothesis Testing and Robustness Tests

The structural model was fit with χ^2 = 46.082, df = 25, p = 0.006, χ^2/df = 1.843, RMSEA = 0.053, CFI = 0.985, TLI = 0.978, SRMR = 0.027. The results of the research hypothesis test can be summarized as shown in Figure 2.

Structural Equation Model (SEM) with Moderators



* p-value < 0.01

Figures 2: Results of Structural Equation Modelling

The result from SEM reported that H_1 perceived enjoyment is positively related to the attitude toward Usage. H_2: Attitude toward usage have positive relationship with intention to subscribe. H_3 the relationship between attitude toward usage and intention to subscribe will be stronger with trialability. The moderating effect was significant for trialability. Interestingly, Social Influence has a negative moderating effect on the relationship between Attitude toward usage and Intention to Subscribe. Therefore, H4 was not supported.

5. DISCUSSION AND RECOMMEDATIONS

This research offers several theoretical contributions. First, the framework of this research links TAM, Social Influence, and the Diffusion of Innovation Theory. This research is an attempt to link these theories to determine the relationships among the proposed variables.

This study has some limitations as we conducted the survey online and only covered Bangkok area. The culture and the lifestyle might be different in other regions and other countries.

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The Influence of Sensory Marketing on Customer Satisfaction and Repurchase Intention for Plant-based Proteins

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The Influence of Sensory Marketing on Customer Satisfaction and Repurchase Intention for Plant-Based Proteins

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Abstract

This research explored the effect of multi-sensory marketing on repurchase intention for plant-based proteins. The senses of sight, taste, and smell were treated as independent variables with customer satisfaction and repurchase intention as mediating and dependent variables respectively. Results were that sight, taste, and smell significantly influenced customer satisfaction which, in turn, significantly influenced repurchase intention. Label information as moderator negatively influenced the relationship between customer satisfaction and repurchase intention. These findings help expand sensory marketing contextual knowledge and understanding of factors influencing repurchase intentions. Implications for practitioners using sensory manipulation to influence purchase behavior are also provided.

Keywords: Sensory marketing, Customer satisfaction, Repurchase intention, Label information

1. Introduction

There is evidence that consumers are increasingly concerned for their health. More and more consumers are concerned about food's environmental impact (Department of Industrial Promotion, 2021). In consequence, plant-based protein has become more popular. This growing market presents an excellent opportunity for entrepreneurs. Consumers tend to accept alternative protein products based on their sensory attributes. They will satisfy if the plant-based protein is similar in appearance, color, odor, taste, flavor, and texture to traditional meat (Fiorentini et al., 2020). However, a lack of published research

reveals how sensory marketing affects customer satisfaction and repurchase intention of plant-based proteins, along with label information as moderator.

Therefore, the objective of this study is to critically examine the relationship between sensory marketing (that are sight, taste, and smell) and customer satisfaction which thus leads to repurchase intention, including studying how label information plays a role in customers' purchases of plant-based proteins.

2. Literature and Framework

The Effect of Multi-Sensory Marketing on Customer Satisfaction

Sensory marketing uses the five human senses: sight, taste, touch, smell, and sound to communicate with consumers. This allows marketers to understand and respond to consumers better than traditional marketing. Nevertheless, the researchers used only three sensory marketing aspects (sight, taste, and smell). The literature review indicated that touch and sound were not directly focused on the product itself (Lindstrom, 2005).

Hypothesis 1-3: The perception of visual, taste, and smell, respectively affects customer satisfaction.

Theory of Planned Behavior (TPB)

The Theory of Planned Behavior (TPB) describes the factors that affect behavioral intentions: attitude toward the behavior, subjective norm, and perceived behavioral control (Ajzen, 1991).

Customer Satisfaction and Repurchase Intention on Plant-based Proteins

Customer satisfaction is the joy or disappointment that results from an individual customer comparing the results of their actual use of a service or product to their expectations (Kotler et al., 1999). At the same time, repurchase intention is the likelihood that a customer will return to purchase goods and services again with the same seller or service provider (Hawkins et al., 1997). If the customer experience meets their expectations, they will find more satisfaction and willingness to repurchase (Lindstrom, 2005).

Hypothesis 4: There is a positive relationship between customer satisfaction and repurchase intention of plant-based proteins.

The Moderating Role of Information

The label conveys the information on the product. This helps create a positive attitude and influence purchase intention. Label information influences repurchase intention, and consumers are more willing to pay for labelled products than unlabeled products (Wansink et al., 2002).

Hypothesis 5: There is a moderating effect of label information on the relationship between customer satisfaction and purchase intention.

Control Variables

This study included five control variables: gender, age, education, income, and marital status. Several studies suggested that demographics influence plant-based protein diets (Alcorta, 2021).

3. Research Methodology

The researcher collected data from 562 respondents who had consumed plant-based proteins. The data was then analyzed with Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) to test the hypotheses. To test the moderating effects, this paper followed Soontornthum et al. (2020).

4. Results

Sample Characteristics

Online questionnaire was completed by 362 respondents, representing 68% response rate. The percentage of women in the sample is 53.9%. Most of the respondents are in the age range of 26-45 years old (41.7%).

Measurement Model

The measurement model was validated with confirmatory factor analysis (CFA), and the model provided a good fit with overall data (χ^2 = 640.61, *df* =231, *p* = 0.00, χ^2/df = 2.77, RMSEA = 0.07, CFI = 0.95, TLI = 0.94, SRMR = 0.07). All standardized factor loading was significant and greater than 0.5.

Hypothesis Testing and Robustness Tests

The structural model was fit with χ^2 = 473.86, *df* = 253, *p* = 0.00, χ^2/df = 1.87, RMSEA = 0.05, CFI = 0.97, TLI = 0.96, SRMR = 0.07. The results of the research hypothesis test can be summarized as shown in Figure 1. The robustness test gives the same results as Structural Equation Modeling (SEM).

5. Discussion

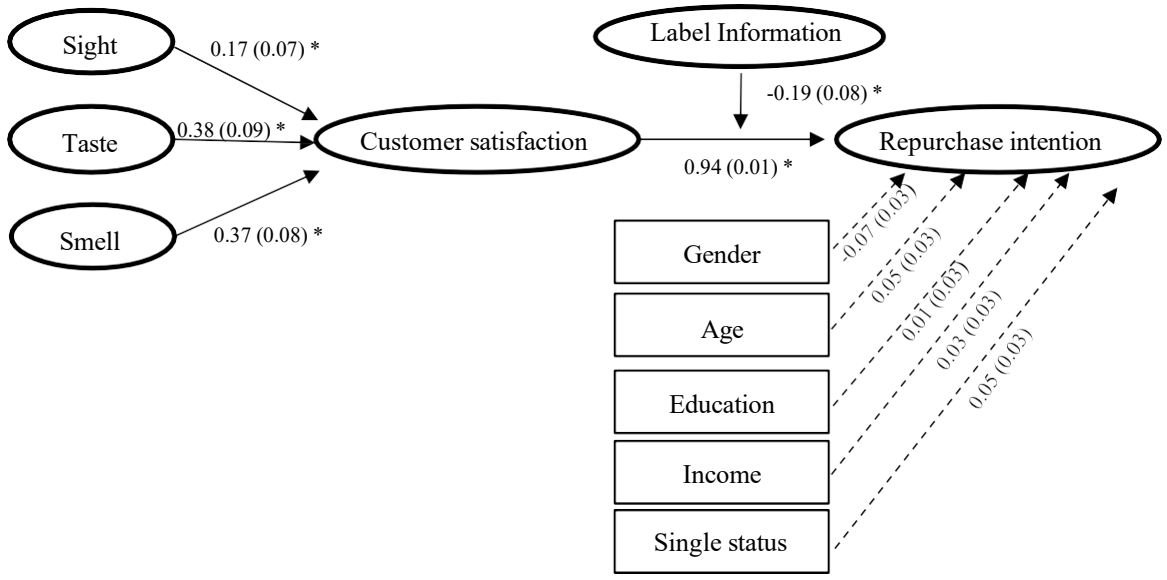

Figure 1 Results of structural equation modeling (SEM)

Note: *p < 0.05. The solid lines and the dotted line represent significant linkages and non-significant linkages, respectively.

Hypotheses 1,2 and 3 were supported. The findings were along the line with previous studies in which plant-based proteins' appearance, color, and shape lead to higher customer satisfaction (Fiorentini et al., 2020). In addition, it has also been proven that packaging and cleanliness make the visual or sight cue attractive (Hoang & Tučková, 2021). The better taste of plant-based protein, the higher customer satisfaction. Consistent with previous research, the taste of plant-based proteins close to animal proteins

will increase customer satisfaction (Fiorentini et al., 2020). An emotional connection is established through the sense of smell. Customers make decisions based on the scent they are satisfied with and make purchasing decisions faster (Lindstrom, 2005).

Satisfied customers are more likely to repurchase when targeted through multi-sensory marketing cues. Furthermore, the concept of consumer behavior shows that consumers will continue to make duplicate purchases based on their attitude towards the product (Ajzen, 1991). Therefore, when customers are satisfied, they are more willing to repurchase.

Label information has a negative effect on the relationship between customer satisfaction and repurchase intention. Because most people who read food labels are health-conscious, they tend to use rationale for food choices rather than feelings (Wansink et al., 2002).

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Burnout and Turnover Intention:

Examining the Mediating Roles of Career Crafting Behaviors

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Burnout and Turnover Intention: Examining the Mediating Roles of Career Crafting Behaviors

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Abstract

This study identified the need to distinguish between internally and externally directed career crafting behaviors and examined their mediating roles between burnout and turnover intention. Drawing upon the Conservation of Resource (COR) theory, this study hypothesized that internally and externally directed career crafting behaviors, which serve as resource investment behaviors, mediate the relationship between burnout and turnover intention. Data were collected from 348 working adults through hardcopy questionnaires in three waves. The empirical findings supported the hypotheses in this study. Theoretical and practical implications were discussed.

Keywords: Burnout, Turnover Intention, Career Crafting Behaviors

1. Introduction

Burnout is a state of emotional exhaustion and disengagement from work often caused by prolonged exposure to unrelenting work-related stress, which can lead to the drainage of mental resources and negatively impact individuals' well-being (Bakker et al., 2004; Maslach et al., 2001; Schaufeli & Salanova, 2014). According to the Work and Well-being Survey conducted by the American Psychological Association (APA) in 2021, approximately 60% of employees experience negative impacts of work-related stress, such as emotional exhaustion, work disengagement, and physical fatigue, which put them at a higher risk of burnout. Furthermore, the survey has also discovered that those who experience workplace stress are three times more likely to seek employment outside of their organization in the next year (APA, 2021). According to the COR theory,

burnout happens due to resource loss, when resources are threatened, or when individuals fail to obtain returns on the investment of resources (Hobfoll, 2001). Individuals in shortage of resources are more vulnerable to further resource loss, thereby initiating a resource loss spiral. As a result, adverse effects such as turnover intention are likely to follow when valued resources are lost or threatened (Hobfoll, 2001). Therefore, given the negative influences of burnout, this study looks into how individuals react to their state of burnout via different directions of career crafting behaviors, namely internally (ICCBs) and externally directed career crafting behaviors (ECCBs). Career crafting behaviors, which serve as resource investment behaviors, can be described as proactive career behaviors that enable individuals to actively shape and manage their career development to reach their intended career goals (King, 2004). Past studies generally measured and operationalized career crafting behaviors through composite measures, which potentially cause confusing results (e.g., Chughtai, 2019; Huang & Hsieh, 2015; Janssen et al., 2021; Taber & Blankemeyer, 2015). Hence, this study makes a clear distinction between internally and externally career crafting behaviors to gain more accurate insights into how these career behaviors relate uniquely to burnout and turnover intention.

2. Literature Review

2.1. The mediating roles of internally (ICCBs) and externally directed career crafting behaviors (ECCBs) between burnout and turnover intention

Based on the COR theory's resource spiral notion, individuals who hold a reservoir of resources are in an advantageous position to invest resources to obtain more resources (Halbesleben et al., 2014). Relating to this study, employees who do not experience burnout are more enriched with resources, which places them in a better position to craft and advance their careers within the current organization (e.g., engage in resource investment behaviors such as ICCBs), thereby lowering their turnover intention. To put it in another way, individuals with better well-being at work are more likely to gain and accrue more resources crucial for their career growth in the organization, eventually achieving a sustainable career within the organization. On the other hand, burnout employees tend to enter into defensive mode to conserve remaining resources and avoid further resource loss (Demerouti

et al., 2014; Halbesleben et al., 2014). They may adopt self-defense coping strategies to build and accumulate external resources crucial for their well-being. Hence, this study suggests that individuals who experience high levels of burnout are triggered to engage in ECCBs to actively craft their careers outside the organization to restore and protect their remaining resources. Accordingly, the following hypotheses are proposed:

Hypothesis 1: ICCBs mediate the relationship between burnout and turnover intention, such that burnout relates negatively to ICCBs (*H1a*), which relate negatively to turnover intention (*H1b*).

Hypothesis 2: ECCBs mediate the relationship between burnout and turnover intention, such that burnout relates positively to ECCBs (*H2a*), which relate positively to turnover intention (*H2b*).

3. Methods

3.1. Sample and Procedure

Three-wave of data collection through questionnaire surveys was conducted. The survey forms were distributed to working adults from private organizations in Malaysia. After matching three waves of data and removing incomplete survey forms, 348 sets of questionnaires were retained for further data analysis. Of these respondents, 61% were women, 41% were between 25 – 34 years old, and 86% had a college/university degree. With regard to the industry, 60% of the participants worked in hospitals, 24% in primary and high schools, and 16% in housing development firms.

3.2. Measures

Scale	Wave	Source	Cronbach's Alphas
Burnout	1	Demerouti et al.'s (2003) Oldenburg Burnout Inventory (OLBI)	Disengagement subscale: 0.94 Exhaustion subscale: 0.92
ICCBs and ECCBs	2	Noe's (1996) 14-item Career Self-Management Scale	Ranging from 0.74 to 0.94
Turnover intention	3	Cammann et al.'s (1983) 3-item Turnover Intention Scale	0.85

4. Results

4.1. Descriptive statistics and correlations

Table 1. *The composite reliability, convergent validity, and discriminant validity of all study variables*

		CR	AVE	*M*	SD	1	2	3	4
1	ECCBs	0.86	0.62	3.73	1.03	(0.79)			
2	ICCBs	0.82	0.53	4.75	0.82	0.26**	(0.73)		
3	Turnover Intention	0.88	0.71	2.77	1.43	0.35**	-0.20**	(0.84)	
4	Burnout	0.90	0.82	2.86	1.15	0.33**	-0.22**	0.61**	(0.91)

Notes: CR = composite reliability; AVE = average extracted variance; bracketed values refer to the square root of the AVE; ** $p < 0.01$

4.2. Confirmatory factor analysis

The measurement model showed a reasonable fit to the data: x^2/df = 2.537, TLI = 0.915, CFI = 0.924, RMSEA = 0.066. The composite reliabilities, convergent validities, and discriminant validities of the study variables were all above the suggested threshold values, indicating statistically adequate psychometric properties (see Table 1).

4.3. Hypotheses testing

The hypothesized structural model exhibited a satisfactory fit to the data: x^2/df = 2.537, TLI = 0.915, CFI = 0.924, RMSEA = 0.066.

4.3.1. Mediating effects of ICCBs and ECCBs

The findings revealed that burnout was negatively and significantly related to ICCBs (β = - 0.21, p < 0.001), which then related negatively and significantly to turnover intention (β = - 0.13, p < 0.005). The results of the mediation analysis showed that the indirect effect of burnout on turnover intention via ICCBs was significant, as zero was not included in the 95% confidence interval (the upper and lower bounds of the confidence interval were from 0.007 to 0.099), indicating a significant mediating effect (Preacher & Hayes, 2008). Therefore, *H1* is supported. Regarding *H2*, the results revealed that burnout was positively and significantly related to ECCBs (β = 0.32, p < 0.001) (*H2a*), which related positively and significantly to turnover intention (β = 0.21, p < 0.001) (*H2b*). The

mediation analysis showed that ECCBs partially mediated the relationship between burnout and turnover intention. This finding provides support for *H2*.

5. Discussion

Building upon the COR theory, this study aimed to discover whether burnout may be a critical factor in initiating a motivational process triggering individuals' distinct aspects of career crafting behaviors. As expected, the results of this study showed that ICCBs mediated the relationship between burnout and turnover intention. In other words, high levels of burnout discourage individuals from engaging in ICCBs to further their careers within the organization. COR theory suggests that individuals may be less willing to risk investing more resources in the organization as they possess limited resources, which they must preserve for unforeseen mishaps in the future (Hobfoll, 2001). This prevents them from advancing their careers within the organization, resulting in high levels of turnover intention.

Other than that, this study also revealed that rather than ICCBs, individuals who experience high levels of burnout are more likely to engage in ECCBs, which intensifies their turnover intention. In other words, individuals do not become demotivated and futile when faced with high levels of strain. Instead, it may induce them to proactively change their current situations by engaging in strategic behaviors crucial for protecting their resources against further loss, replenishing their resources, and acquiring additional resources (Demerouti et al., 2014; Hobfoll et al., 2018). Thus, individuals who experience high levels of burnout may find ways to distance themselves from job strain that can further erode their remaining resources (Hobfoll, 2001).

5.1. Theoretical Implications

This study clearly distinguished between internally and externally directed career crafting behaviors and examined their mediating roles between burnout and turnover intention. The findings of this study showed that individuals' directions of career crafting behaviors are highly dependent upon their burnout levels, which then relate distinctively to turnover intention. In other words, burnout

stimulates them to engage in different resource investment behaviors (ICCBS or ECCBs) aimed at gaining and protecting their resources, which are essential for their career well-being.

5.2. Practical Implications

The findings of this study suggest that interventions aimed at minimizing employees' burnout should be provided so that they can have more energy resources to actively engage in ICCBs, which are essential for organizational functioning. For instance, organizations can offer stress management training courses or work-related stress intervention programs, such as cognitive-behavioral intervention, which may help reduce employees' burnout while increasing their coping abilities to adapt to any stressful events in the future (Ryu et al., 2020).

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The Impact of The Death Case due to the Covid-19 Pandemic on the Sale of cars

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The Impact of The Death Case due to the COVID-19 Pandemic on the Sale of cars

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Extended Abstract

In this article, we explore the relationship between the magnitude of COVID-19 influence during shutdown in 2020 and the sales quantity of car. The data of this paper is a city level monthly panel data. We use fixed-effects model to carry out Generalized Difference-in-difference (DID) Method to study the influence of the threatening by death due to pandemic on the sale of cars. Robustness test further confirms that the assumption of DID could be satisfied.

Keywords: COVID-19, shutdown, car sale, physiological influence of death

1. Introduction

In 2020, Hubei province has the highest number of COVID-19 deaths for over 68000. To control the spread of the virus, the Chinese government has imposed shutdown policy, which restrict people's travel. After the shutdown in Wuhan in January 23, other cities in Hubei province also announced the suspension of urban public transport. We use fixed-effects model to further investigate the impact of the death due to COVID-19 epidemic on people's car buying behavior to explore the changes in the sales of different types of vehicles before and after the shutdown of the city. The sample consists of a city-monthly panel data including fifteen cities in China covering the sales quantity of different car types

from 2018 to 2020. Five cities with highest number of deaths, which are in Hubei province, are our treatment group. Other ten cities are our control group with similar population and GDP, as well as car sale growth rate before the pandemic.

This study finds that, although shutting down event significantly and negatively influence the sale quantity of cars in all cities, the treatment group buy more cars.

2. Literature review

Through the result of qualitative and quantitative analysis, Covid-19 pandemic has profound effects on consumer behavior in terms of Purchasing Mode including the type of store purchased from and purchase frequency, Quantity of Products and Type of Products (Vázquez-Martínez, Morales-Mediano, and Leal-Rodríguez, 2021). The economic crisis suppresses demand for cars (Klein, Høj and Machlica., 2021). Dring a crisis, fear can be a powerful psychological reason for people to avoid public transport (Potoglou et al., 2010). Zhang et al. (2005) found that the decrease in travel is associated with internal motivations, external enforced measures and travel bans during the SARS period. Due to the fear of catching the disease, people reduced their public transport use in Taipei City within the SARS epidemic in 2003 (Wang and Thiel,2014), and in UK within the Swine Flu outbreak in 2009 (Rubin et al., 2009).

2. Econometric Strategy, Hypothesis and Data

We follow Busse et al. (2015), and use the fixed effects model. In this paper, the phycological influence from large number of death cases due to the pandemic is our treatment. The regression equation is shown as follows:

$$sales_{it} = \beta_0 + \beta_1 shutdown_{it} + \beta_2 did_{it} + \gamma_1 did_{it} * eff1-16_{it} + \gamma_2 did_{it} * e1ff1-16_{it}$$
$$+ \gamma_3 did_{it} * e2ff1-16_{it} + \gamma_4 did_{it} * e3ff1-16_{it} + \gamma_5 did1_{it}$$
$$+ \gamma_6 did2_{it} + \gamma_7 did3_{it} + \gamma_8 did\_1_{it} + \gamma_9 did\_2_{it}$$
$$+ \beta_3 population_{it} + \beta_4 Dincome_{it} + \beta_5 passenger_{it} + \beta_6 Dseasonal_{it} + \varepsilon_{it}$$

The explained variable is *sales*, which represents sales quantity, and the explanatory variable *shutdown* , as a control variable, represents the percentage of shutdown occurs in a month, in the city i on t month. *Did* represents shutdown in Hubei. *Dideff1-16* is sixteen different car types during shutdown in Hubei. The interaction coefficients represent whether cities in Hubei will affect the sales quantity of different types of cars. *population*, *Dincome*, *passenger*, and *Dseasonal* are population quantity, number of passengers using the public transportation, and the seasonal dummy. *ε_i* represents the regional fixed effect, which controls the unobservable factors that do not change with time.

H1: The influence of death cases due to the pandemic has an impact on the sales quantity of cars.

H2: The influence has no delayed impact on the total sales quantity of cars in Hubei.

H3: The car sales trend of Hubei without shutdown is the same as that of the control group.

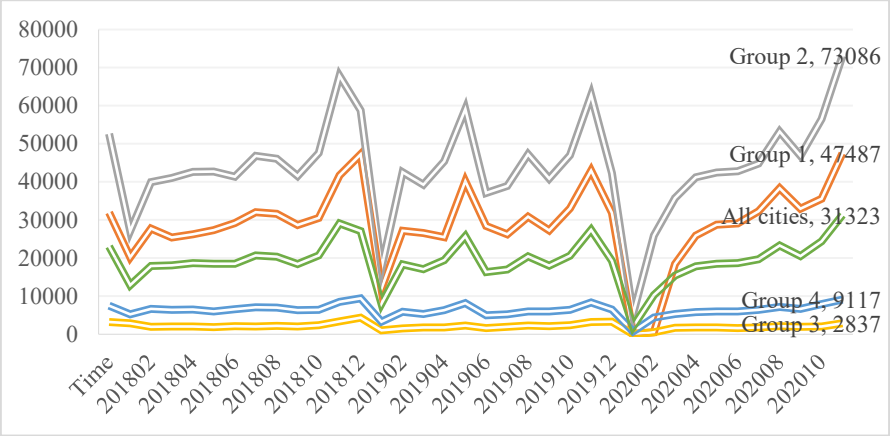
The data comes from the car insurance information of the China insurance regulatory commission. Table 1 reports the descriptive statistical results of the main variables.

Table 1 Descriptive Statistics of Major Variables

Variable	Obs	Mean	Std. Dev.	Min	Max
sales	7779	1337.108	3020.458	1	29126
shutdown	7779	.045	.184	0	1
did (Shutdown*treat)	7779	.015	.107	0	1
did1 (1st month after shutdown*treat)	7779	.009	.092	0	1
did2 (2nd month after shutdown*treat)	7779	.008	.091	0	1
did3 (3rd month after shutdown*treat)	7779	.009	.096	0	1

did_1 (1 year before shutdown)	7779	.11	.312	0	1
did_2 (2 year before shutdown)	7779	.107	.31	0	1
population	7779	962.514	848.385	116.39	3416
Dincome	7779	46255.615	16899.507	23782	76437
Dseasonal	7779	.255	.436	0	1
passenger	7779	5982.864	7224.506	167.32	26581.33

Graph 1



The only city in Group 1 is Wuhan, the capital city of Hubei Province and the and the four corresponding control group cities (Beijing, Chongqing, Guangzhou, Shanghai, and Shenzhen) are in Group 2. Group 3 consists of Huanggang, Suizhou, Xianning and Xiaogan in Hubei province with the high death quantity. Beihai, Dezhou, Nanjing, Zhaoqing and Longnan in Group 4 are matched with five cities in Hubei province. Common trend before pandemic is clear.

4 Results

Table 2 presents the fixed effect results of the impact of shutdown on the car sales quantity regardless of types. For H1, the regression results in table3 show that the coefficient of interaction *did* is significantly positive at the statistical level of 5%, indicating that the threat of death significantly increases the quantity demanded for cars to avoid risk. For H2, column (3) shows that the coefficients of *did1, did2 and did3* are not significant. That indicates once the threat removes, people's behavior are same. For H3, column (4) is used for robust test, it shows that the coefficients of *did_1* and *did_2*

are not significant, indicating that the car sales trend of Hubei before pandemic is the same as that of the control group.

Table 2

	(1)	(2)	(3)	(4)
did	973.4168**	960.6808**	961.7255**	990.2601**
	2.3749	2.34	2.3337	2.0703
shutdown	-1730***	-1710***	-1710***	-1710***
	6.6637	6.5163	6.5195	6.4906
population	-1.2556*	-1.5711***	-1.5678***	-1.5836***
	1.7393	2.8567	2.8382	2.7874
population2	0.0005*	0.0007***	0.0007***	0.0007***
	1.6983	3.1189	3.1027	3.0549
Dincome	-0.0023	0.0031	0.0031	0.0035
	0.2384	0.2951	0.2919	0.2973
Dseasonal	471.5027***	471.8320***	472.2053***	473.2867***
	6.6126	6.6173	6.5896	6.608
passenger	-0.0205			
	0.7478			
did1			-16.4291	4.0407
			0.4201	0.0495
did2			19.3445	39.7747
			0.6033	0.6119
did3			26.668	47.1045
			0.7784	0.8382
did_1				21.9809
				0.3018
did_2				30.7796
				0.3652
Constant	1821.6814***	1495.7627***	1495.3193***	1474.0261**
	3.359	2.7505	2.7501	2.4359
R-squared	0.094	0.093	0.093	0.093
N	7779	7779	7779	7779

**** p<.01, ** p<.05, * p<.1*

5. Conclusion

The research result in this paper shows that shutdown will decrease the car sales quantity across most of the country but will increase the car sales quantity in cities with severer pandemic and high mortality rate. Anti-epidemic activities required transportation capacity. In Hubei province, the

commutes of health workers were disrupted by the shutdown. As a result, car sales were relatively high in severer pandemic areas. On the other hand, the severe epidemic and high fatality rate led to a greater vigilance for personal safety. Future Improvement could include expending sample.

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Corruption, Reputational Damage, and Corporate Foreign Philanthropic Giving

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Corruption, Reputational Damage, and Corporate Foreign Philanthropic Giving

Extended Abstract

Using MNEs' Foreign Corrupt Practices Act (FCPA) violations as a negative reputation shock, we examine whether and how U.S. MNEs use corporate foreign philanthropic giving to repair the reputational damage sustained from corporate bribery in the host country. Employing a staggered difference-in-differences (DiD) design, we find that peer U.S. MNEs significantly increase their giving to the host country to repair the spillover reputational damage. Moreover, donations successfully help MNEs restore firm value. Overall, our findings show that U.S. MNEs use philanthropic giving to foreign countries as a strategic tool to manage their reputational capital after a negative reputation shock.

Keyword: Corporate Social Responsibility, Bribery, Stakeholder, Reputational Capital

1. Introduction

Globalization has increased calls for multinational enterprises (MNEs) to use their resources to alleviate a wide variety of social problems (Hillman and Keim, 2001). One common resource MNEs use to help resolve social issues is corporate philanthropy, which is an important component of corporate social responsibility (see Lev, Petrovits, and Radhakrishnan 2010; Marquis and Lee 2013). Most studies on corporate philanthropic giving have focused on giving to domestic institutions or giving as a whole. Few papers have investigated corporate philanthropic giving by MNEs to foreign host countries, and even fewer have assessed how MNEs dynamically adjust their philanthropic giving in response to negative reputation shocks in a foreign host country. We posit that U.S. MNEs strategically employ corporate philanthropic giving to build reputational capital. Specifically, we examine whether and how U.S. MNEs use corporate philanthropic giving to a foreign host country to repair the reputational damage sustained from corporate bribery in the host country.

We use MNEs' bribery of government officials in foreign host countries and the related enforcement

action as a negative reputation shock. Enacted by the U.S. Congress in 1977 after the Watergate scandal, the Foreign Corrupt Practices Act (FCPA) makes it unlawful for firms to engage in corporate bribery with foreign government officials for the purpose of obtaining or retaining business. With the rising number of FCPA enforcement cases and the increasing penalty amounts for these cases in recent years, violations of the FCPA have become a substantial concern for U.S. MNEs (Jia, Li, and Zhao 2022).

2. Literature Review and Hypothesis Development

An MNE's FCPA violations can negatively affect its corporate reputation for two main reasons. First, these violations reveal significant deficiencies in the firm's internal control system and bring into question the quality of the firm's overall corporate governance (Christensen, Maffett, and Rauter 2021; Lawson, Martin, Muriel, and Wilkins 2019). Second, these violations indicate that the firm has failed to contribute positively to the local communities that it serves in the foreign host countries. Corporate bribery fosters corruption in the host country, which has many negative consequences for the host country, including slower economic growth (Mauro 1995), lower public policy effectiveness (Ades and Di Tella 1997), and less investment in education and health care (Mauro 1998). Due to the governance and social implications of corporate foreign bribery, an MNE's FCPA violation deviates from the social expectations in the United States, the home country of the MNE, even when it takes place in foreign host countries where bribery may be an accepted norm (Darrough 2010). It therefore negatively affects an MNE's corporate reputation and causes reputation loss at the home country. These possibilities lead to our first hypothesis:

> Hypothesis 1. U.S. MNEs experience reputation losses after their FCPA violations are revealed through enforcement.

While an FCPA violation can cause reputational damage to U.S. MNEs that are directly involved in the enforcement actions (i.e., focal firms), we expect such reputational damage to spread to other U.S. MNEs that operate in the same host country as the focal firms (i.e., peer firms), creating a spillover

effect. This negative spillover may occur because one MNE's FCPA violation may lead investors to question all MNEs operating in the same host country as these firms tend to develop similar business practices when adapting to the local environment (Kostova and Zaheer, 1999). It therefore contaminates the brand name of all U.S. MNEs and causes systematic reputational damage to peer firms operating in the same host country. This leads to our second hypothesis

> Hypothesis 2. Peer U.S. MNEs that operate in the same host country as the focal firms experience reputation losses after the focal firms' FCPA violations.

Firms experiencing reputation losses due to negative events take significant remedial actions to rebuild their reputational capital. Chakravarthy, DeHaan, and Rajgopal (2014) find that firms engage in more reputation-building actions, especially those targeted at capital market providers, following major accounting restatements. Akey, Lewellen, Liskovich, and Schiller (2021) find that firms increase their CSR investment following unexpected data breaches to restore reputational capital. Our study examines corporate bribery of MNEs that takes place in foreign host countries and as a result primarily affects the local communities in these host country. In doing so, our work complements prior research that generally focuses on reputation shocks that occur in the United States and directly affect U.S. communities (Chakravarthy et al. 2014; Akey et al. 2022).

We expect that U.S. MNEs, both focal and peer firms that suffer reputation losses from FCPA violations will use foreign philanthropic giving to rebuild their reputational capital. Prior literature suggests that corporate philanthropic giving is frequently used by MNEs as part of their multinational strategy to operate in foreign markets even in the absence of negative reputation shocks (Henisz, Dorobantu, and Nartey 2014). Philanthropy giving can help firms boost sales growth (Lev et al. 2010), gain legitimacy (Hornstein and Zhao 2018; Wang and Qian 2011), manage earnings (Petrovits 2006) provide firms with insurance-like protections in unfavorable situations and ultimately maximize shareholder wealth (Godfrey 2005). Therefore, philanthropic giving is a prime candidate for MNEs seeking to restore their reputations following FCPA enforcement in the foreign host countries. Our hypotheses are stated as follows:

Hypothesis 3. Focal and peer U.S. MNEs increase their philanthropic giving to a host country after receiving FCPA enforcement in the host country.

3. Method and Result

To empirically examine these research questions, we manually collect FCPA enforcement data from the U.S. Securities and Exchange Commission (SEC) and U.S. Department of Justice (DOJ) websites. We collect stock price data from the Center for Research in Security Prices (CRSP) and data on philanthropic giving from the Foundation Directory Online (FDO, formerly known as Foundation Center). First, we employ an event study approach to examine the reputational damage imposed by initial FCPA enforcement on focal firms and peer firms. We find that all U.S. MNEs, including focal firms of FCPA enforcement actions and peer firms operating in the same host country, experience negative returns over the 5-day window around the enforcement date, suggesting that U.S. MNEs experience significant reputational losses after the FCPA enforcement (Table 1).

Next, we study how MNEs strategically use philanthropic giving to repair their reputational damage (Table 2). Employing a staggered difference-in-differences (DiD) design, we find that while focal firms of FCPA enforcement do not change their donations to a foreign country after the initial FCPA enforcement in that country, peer MNEs significantly increase their donations to the foreign country. Consequently, peer firms that donate to the FCPA focal country enjoy a higher firm value relative to peer firms that do not donate (Table 3). Together, these results suggest that philanthropic giving, when used after a focal firm's misconduct is revealed, may not be as effective in repairing reputational damage because it can be perceived as opportunistic and insincere. However, when used proactively by peer firms that suffered spillover reputational damage, philanthropic giving can help these firms build reputational capital.

In addition, we perform various analyses that examine the parallel trends assumption, which is the identifying assumption underlying our staggered DiD design. Our main results are robust to these tests and provide confidence for our main inference on the effect of FCPA enforcement on MNEs'

philanthropic giving. In cross-sectional analyses, we find that peer firms that operate in sin industries, peer firms that have weaker corporate governance and social performance donate more after the initial FCPA enforcement.

4. Discussion

Our paper extends prior research on corporate misconduct and reputational capital by focusing on FCPA violations – a unique corporate misconduct that occurs in foreign host countries and as a result primarily affects the local communities in the foreign countries. Unlike prior studies that generally examine misconducts that occur in the United States and adversely affect U.S. stakeholders, our paper exploits an international setting that allows us to investigate the implications of U.S. MNEs' misconducts in foreign countries and how these firms remedy the reputational damage from these misconducts. By doing so, we focus on the citizens of foreign host countries as a unique and important group of stakeholders for MNEs, which remains under-researched.

Moreover, our paper examines the reputational loss and subsequent remedial action of focal firms of FCPA violations as well as peer firms that operate in the same host country as the focal firms. Our results show that while focal firms' giving to an FCPA host country does not change significantly, peer MNEs increase their giving substantially after FCPA enforcement against the focal firms. The difference in response from focal and peer firms suggests that philanthropic giving, when used after a focal firm's misconduct is revealed, may not be as effective in repairing reputational damage. When used proactively however, philanthropic giving can help peer firms manage reputational capital.

Furthermore, our paper provides new evidence for the debate on whether corporate social responsibility activities in general, and philanthropic giving in particular, increase firm value or merely reflect agency costs. Our results show that peer firms increase their philanthropic giving to a foreign country after experiencing reputational damage in that country, which is more consistent with a value-enhancing view.

Finally, our paper contributes to the literature on how the FCPA affects MNE behavior. Jia et al. (2022) find that FCPA enforcement deters U.S. MNEs' from making foreign investment. However, it remains unclear whether and how MNEs mitigate this unfavorable impact of FCPA enforcement. Our paper addresses this question by examining the philanthropic strategies of U.S. MNEs. Our findings show that FCPA enforcement tarnishes U.S. MNEs' brand name, which prompts peer MNEs to strategically employ philanthropic giving to repair the reputational damages. These findings have implications for MNEs conducting business in complex institutional environments in foreign host countries and for authorities interested in the consequences of FCPA enforcement.

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Appendix 1: Variable Definitions

Name	Definitions	Sources
Dependent Variables		
Foreign Donation	Total amount of donation to the host country. Log transformations (natural log of the exact value plus one) are used in regressions.	Foundation Directory Online, formerly known as Foundation Center
Domestic Donation	Total amount of domestic donations by the firm. Log transformations are used in regressions.	
Foreign Donation to Elsewhere	Total amount of donation in other foreign host countries. Log transformations are used in regressions.	
Independent Variables		
First FCPA Focal	An indicator variable that turns from 0 to 1 for focal firms after a foreign host country has experienced its first FCPA enforcement. Focal firms are firms that have been defendants of an FCPA enforcement action.	Manually collected from SEC and DOJ websites; Exhibit 21
First FCPA Peer	An indicator variable that turns from 0 to 1 for peer firms after a foreign host country has experienced its first FCPA enforcement. Peer firms are firms that report a subsidiary in the host country that experienced its first FCPA enforcement but are not the defendants of an FCPA enforcement action.	
Control and Other Variables		
Host Country Importance	Number of times that the host country has been mentioned in exhibit 21 of 10-K. Log transformations are used in regressions.	Exhibit 21 of 10-K
Number of Total Foreign Subsidiaries	Log transformation of the firm's total number of subsidiaries outside the United States.	Capital IQ
Geographic Diversification	Log transformation of the number of countries that the firm operates in.	Compustat
Trend	Year minus 2001 - consecutive numbers starting from 1 for the year 2002.	Manually coded
Natural Disaster	An indicator variable equal to 1 if the host country has experienced at least one natural disaster during the year, 0 otherwise.	Center for Research on the Epidemiology of Disasters
GDP Distance	Absolute difference between the GDP of the host country and the United States. Log transformations are used in regressions.	World Bank
Rule of Law Distance	Absolute difference between the rule of law index of the host country and the United States.	
U.S. FDI to Host	Foreign direct investment from the United States to the host country, scaled by the host country's GDP.	U.S. Bureau of Economic Analysis (BEA)
Corporate Social Responsibility	The level of a firm's corporate social responsibility performance calculated as the sum of strengths minus sum of concerns of environmental and social ratings in the database.	KLD
Corporate Governance	The quality of a firm's corporate governance calculated as the sum of strengths minus sum of concerns of governance ratings in the database.	

Table 1: FCPA Enforcement, Reputational Damage, and Spillover Effect—Tests of H1 and H2

Panel A: Reputational Damage to Focal Firms

Day	N	Raw Return	Abnormal Return	Cumulative Abnormal Return from Day -2	Direct Cost	Indirect Cost
-2	29	-0.37%	-0.78%	-0.78%		
-1	29	-1.32%	-1.09%	-1.88%		
0	29	1.07%	0.99%	-0.89%	-0.91%**	-1.51%*
1	29	0.08%	-0.43%	-1.32%		
2	29	-1.07%	-1.05%*	-2.42%**		

Panel B: Spillover to Peer U.S. MNEs Operating in the Same Host Country

Day	N	Raw Return	Abnormal Return	Cumulative Abnormal Return from Day -2
-2	7018	0.09%	-0.18%***	-0.18%***
-1	7018	-0.35%	-0.21%***	-0.39%***
0	7018	-0.21%	0.05%	-0.34%***
1	7018	-0.12%	-0.08%	-0.42%***
2	7018	-0.32%	-0.06%	-0.47%***

This table presents event study results that examine reputational damage and its spillover effect over the 5-day window around the settlement of FCPA enforcement. *Raw Return* is average daily returns of affected companies. *Abnormal Return* is daily abnormal returns derived from market model. *Cumulative Abnormal Return* is the sum of abnormal returns from the start of event window (Day −2) to the event dates with the minimum and maximum observations winsorized. *Direct cost* is the total monetary penalty amount divided by the firm's market capitalization at the beginning of the event window, with the minimum and maximum observation winsorized. *Indirect cost* is cumulative abnormal return from day -2 to day +2 minus direct cost. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Table 2: FCPA Enforcement and Foreign Donations—Test of H3

Dependent Variable:	(1) Ln(Foreign Donation)	(2) Ln(Foreign or Domestic Donation)
First FCPA Focal	-0.361	-0.415
	(-0.28)	(-0.32)
First FCPA Peer	0.959***	1.068***
	(3.35)	(3.68)
Host Country Importance	0.081	
	(0.81)	
Number of Foreign Subsidiaries	-3.199***	-0.930**
	(-11.07)	(-2.09)
Geographic Diversification	0.520***	0.502***
	(4.28)	(4.34)
Foreign Donation to Elsewhere	0.022**	0.011
	(2.06)	(1.04)
Trend	-0.662***	-0.682***
	(-18.68)	(-21.55)
Natural Disaster	-0.012	-0.027
	(-0.08)	(-0.19)
GDP Distance	-0.537	0.310
	(-0.30)	(0.20)
Rule of Law Distance	-0.232	-0.124
	(-0.50)	(-0.27)
U.S. FDI to Host	1.220	
	(1.06)	
Corporate Social Responsibility	-0.023	-0.018
	(-1.26)	(-1.04)
Corporate Governance	0.063*	0.062*
	(1.82)	(1.87)
Firm, Country, Year Fixed Effects	Yes	Yes
Observations	14,014	15,435
Adjusted R-squared	0.307	0.374

This table presents results for our analyses of H2 on the effect of FCPA enforcement in a foreign host country on U.S. firms' corporate giving to that foreign country. Column (1) uses a DiD design in which donations to foreign host countries of that have experienced FCPA enforcement are the treatment group and donations to foreign host countries that have not experienced FCPA enforcement (non-FCPA foreign host countries) are the control group. Column (2) uses an alternative DiD design in which firms' domestic donations, i.e., donations to institutions in the United States, and donations to non-FCPA foreign host countries are both used as the control group. Robust t standard errors are clustered at firm-country pair level. All continuous variables are winsorized at the 1st and 99th percentiles. The t-statistics are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. Detailed variable definitions are provided in Appendix 1.

Table 3: FCPA Enforcement, Foreign Donations, and Firm Value

Dependent Variable:	Tobin Q
Post Donation Year1	**-0.00695**
	(-0.27)
Post Donation Year2	**0.00762**
	(0.42)
Post Donation Year3	**0.04016****
	(2.01)
Post Donation Year4	**0.00181**
	(0.09)
Post Donation after Year4	**0.01100**
	(0.60)
Return on assets	2.03465**
	(2.15)
Leverage	-0.16112
	(-0.44)
Advertising Expense	2.03857
	(0.58)
R&D Expense	4.24611*
	(1.73)
Sales Growth	-0.12843
	(-1.37)
Capital Expenditure	-0.53548
	(-0.22)
Size	-0.48801***
	(-5.10)
Age	0.39528
	(1.05)
Corporate Social Responsibility	-0.02125*
	(-1.86)
Corporate Governance	-0.02368**
	(-1.99)
Firm, Country, Year Fixed Effects	Yes
Observations	11,705
Adjusted R-squared	0.833

This table presents results for our analyses on the effect of peer MNEs' post-FCPA donations on firm value. Robust t standard errors are clustered at firm-country pair level. All continuous variables are winsorized at the 1st and 99th percentiles. The t-statistics are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. Detailed variable definitions are provided in Appendix 1.

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Leveraging Managerial Cultural Capital: Making International IT Offshoring Firms in the Asia Pacific More Resilient in Turbulent Times

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Leveraging managerial cultural capital: Making international IT offshoring firms in the Asia Pacific more resilient in turbulent times

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Extended Abstract

This study highlights how the international IT offshoring industry particularly in the Asia Pacific region can become resilient amidst the continuing negative impact of the global pandemic. Specifically, this study puts the spotlight on managerial cultural capital. Studies were conducted in two international IT offshoring firms in the Philippines (Study 1 n=215; Study 2 n-273) revealing how managerial cultural capital in the form of managerial cultural intelligence can facilitate effective networking and relationship building which are critical in the success of global businesses in the new normal, post-pandemic context.

Keyword: Resilience, Cultural Capital, International IT Offshoring, Asia Pacific.

1. Introduction

The international IT offshoring industry reported significant growth in the Asia Pacific region (Tholons, 2016; ATKearney, 2015), however, like many industries, it was not spared by the COVID-19 pandemic. While the impact may not be as disastrous compared to other industries, there remains to be a challenge on how to remain resilient in this highly competitive and challenging business environment. Hence, in this study, we aim to contribute to knowledge by highlighting the important role of managerial capitals in ensuring resiliency within the international IT offshoring industry in the Asia Pacific region. Managerial capitals consist of talents of managers within firms who help ensure the delivery of high quality and innovative services (e.g., Manning, Larsen & Bharati, 2015; O'Cass & Sok, 2013). We focus on these managerial capitals and the implications of leveraging on these to

ensure resilience of international IT offshoring firms particularly in the Asia Pacific region in the new normal, post-COVID context.

1. Conceptual Background and Hypotheses Development

1.1. Managerial Human Capital and Social Capital

Managers are assets who play significant roles in ensuring that organizational efficiency is achieved and that all the functions in an organization are strategically implemented (Wiersema, 2015). Managers are tasked to oversee aspects of organizational functioning, hence, they should have the set of knowledge, skills and experiences to ensure proper delivery of such functions. This set of capabilities can be argued to form the managerial human capital. Managerial human capital is being asserted in this study to be positively and significantly related to managerial social capital or the collection of capabilities of managers that enable the establishment of mutual obligations and friendships (Luk et al., 2008). This assertion draws from Rowley and Redding's (2012) work on human and social capital. They explained that human capital is related to social capital which is referred to as the horizontal associations between and among people that enable them to be productive and competitive (Armstrong, 2001). They further explained that human capital leads to the growth of social capital mainly because of the collective quality of people allowing them to establish social networks that set the stage for trust, cooperation and innovation (Rowley & Redding, 2012). As highlighted by Johnson, Schnatterly and Hill (2013), human capital consists of skills and experiences that can be utilized by company directors and CEOs to achieve effective decision-making and building interorganizational ties. At the managerial level, this assertion can also be made. When managers possess human capital which consists of a bundle of knowledge, skills and experiences then it would enable them to have social capital or the possession of the capability to easily establish social networks and partnerships. Santarelli and Tran (2013) empirically demonstrated the link between human and social capital in shaping entrepreneurial performance in Vietnam. Similarly, Kobayashi, Kagawa and Sato (2015) found significant relationship between human capital and social capital in the Japanese labor market. Following these theoretical assertions and empirical findings, it is posited that:

H1: Managerial human capital is positively and significantly related to managerial social capital.

2.2 Mediating role of managerial cultural capital

Cultural intelligence (or CQ) is a set of cultural capital which has shown to play an important role in IT offshoring projects particularly as a driver for the development of negotiated culture which is mainly characterized by shared understanding and deep trust-based interpersonal relationships among project team members (Gregory, Prifling & Beck, 2009). CQ has further been viewed as a dynamic capability (Moon, 2010) possessed by a collective or a group of organisational members. This assertion has given rise to the concept of managerial CQ which has been defined as the collection of organizational managers' cultural capability that is composed of cognitive, metacognitive, motivational and behavioral components (Ang & Inkpen, 2008). Managerial CQ can be argued to mediate the relationship between managerial human capital and managerial social capital. Ang and Inkpen (2008) assert that CQ can help facilitate the development of effective inter-organizational interface between the supplier (or service provider) and customers. When managers in service provider's firm have high levels of CQ then it can be expected that they can establish substantial and effective relationships with their clients, customers and other stakeholders despite cultural differences. In other words, they would manage effectively cultural differences as they would have set of strategies related to effective communication in culturally-diverse contexts (Bucker, Furrer, Poutsma, Buyens 2014), cultural decision making effectiveness (Ang et al, 2007) and performance effectiveness (Presbitero & Toledano, 2017). Such strategies can enable managers to easily develop and establish social ties and linkages due to the intercultural capability and knowledge of various cultures and how they operate. Hence,

H2: Managerial cultural intelligence mediates the relationship between managerial human capital and social capital

2. Method

To test these hypotheses, two studies were conducted in the Philippines. Both studies followed the same procedures. An initial approach was made to the Chief Executive Office/President of the IT offshoring company in the Philippines. Meetings were held to discuss the objectives of the study. After the consent was obtained, potential respondents were identified and an online survey instrument was developed and pre-tested. The participating companies were assured that the identity of the respondents as well as their identities would remain anonymous. Two hundred fifteen participated in the first study and two hundred seventy three participated in the second study.

3. Results

To test mediation for Study 1, Baron and Kenny's (1986) guidelines were followed. First, the influence of the predictor variable (managerial human capital) on the outcome variable (managerial social capital) was tested. Second, the influence of the predictor variable (managerial human capital) on the mediator (managerial CQ) was determined. Third, the predictor variable (managerial human capital) was regressed on both mediator (managerial CQ) and outcome variable (managerial social capital). Results show that managerial human capital has a positive and significant influence on managerial social capital (β=.30, $p < 0.05$) demonstrating support for H1. Results further show that managerial human capital has a positive and significant influence on managerial CQ (β=.35, $p < 0.05$). When managerial human capital was regressed on both managerial CQ and managerial social capital, the result remained positive and significant (β=.34, $p < 0.05$). Sobel test (Sobel 1982) was conducted and result showed that the path to human social capital was significant (z=2.54, $p<.05$) showing support for H2 that managerial CQ mediated (partially) the relationship between managerial human capital and managerial social capital.

For Study 2, results show that managerial human capital has a positive and significant influence on managerial social capital (β=.21, $p < 0.05$) further demonstrating support for H1. Results further show that managerial human capital has a positive and significant influence on managerial CQ (β=.25, $p < 0.05$). When managerial human capital was regressed on both managerial CQ and managerial social capital, the result remained positive and significant (β=.30, $p < 0.05$). Sobel test (Sobel, 1982) was

conducted and result showed that the path to human social capital was significant ($z=2.97$, $p<.05$) showing support for H2b that managerial CQ mediated (partially) the relationship between managerial human capital and managerial social capital.

4. Discussion and Conclusion

This research puts the spotlight on managerial capital which emphasis given on managerial human capital, managerial social capital and managerial cultural capital. These capitals are shown to be valuable in international IT offshoring firms and specific emphasis has been given on cultural capital in the form of managerial cultural intelligence. Managerial cultural intelligence is a specific set of capabilities that can be influenced by managerial human capital and can consequently explain and impact managerial social capital. This mechanism which explains the role of managerial cultural intelligence highlights the need to constantly develop cross-cultural capabilities of managers within international IT offshoring firms as a way to become resilience amidst the pressures from the external environment. The international IT offshoring industry operates in global contexts, hence, it is imperative that they are able to train and develop a pool of managers with high levels of cultural intelligence to help them secure a competitive advantage during this period of global disruptions.

However, while we have generated valuable insights, there remains to be limitations in this study which can be pursued in future research. For example, more distal outcome variables can be examined in future studies. In addition, directly measuring resilience both at managerial level and firm-level may be valuable in further providing support on how resilience is influenced particularly in global disruptions such as in the case of a pandemic. Organizational-related variables can also be examined in the future to determine the most valuable factor that helps build managerial capitals vis-à-vis resilience in organizations.

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The Influence of Perceived Self-deficits on Consumer Preference for Compensatory versus Adaptive Consumption: The Moderating Effect of Implicit Self-theories

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Extended Abstract

This paper investigates when and how consumers exhibit different consumption preferences (compensatory vs. adaptive consumption) when encountering self-deficits. Several studies among Chinese subjects showed that entity-theorists experiencing self-deficits held higher purchase intention for compensatory consumption, which was driven by the motive to self-defend; whereas incremental-theorists experiencing self-deficits held higher purchase intention for adaptive consumption, while the mediated role of the motive to self-enhance was not significant here. We also showed that a prior self-recovery opportunity would attenuate the motives of both self-defend and self-enhance, and thus reduce purchase intention for compensatory and adaptive consumption, respectively.

Keyword: Consumption Preference, Self-Deficits, Implicit Self-Theories, Goal Orientation

1. Introduction

We sometimes hold inconsistent or even conflicting beliefs between our ideal self and the actual self (Higgins, 1987). When perceiving self-deficits, consumers could resort to two resolving patterns: compensatory consumption and adaptive consumption (Kim and Gal, 2014). Compensatory consumption helps compensate the threatened self through status-signaling or "making up" for ideal self. This could partly explain why Chinese luxury market increased by 57% in 2020 despite of COVID-19, as the high-income consumers urged to regain their self-pleasure after epidemic lockdown (BCG, 2021).

Adaptive consumption helps enhance the deficit domain and improve capabilities level (Kim and Rucker, 2012), as an effective way of filling the psychological discrepancy and reducing anxiety. This is evidenced by the rapid growth of Chinese postgraduate training market. However, little research has investigated the differences between the two consumption patterns. This paper focuses on when and how consumers would resort to compensatory versus adaptive consumption as a means to remedy their impaired self-esteem.

2. Literature and Hypotheses Development

2.1. Self-Deficits and Consumption Decisions

Self-deficits could activate psychological discomfort and consumers make consumption decisions to restore their self-esteem (Gao et al., 2009). Kim and Gal (2014) found that consumers preferred compensatory consumption when facing self-threats from their ideal beliefs, because compensatory products helped disguise the discrepancies by signaling their ideal status. Meanwhile, they also documented that consumers with higher level of self-acceptance will be less anxious about the current threats and choose adaptive consumption to enhance their capabilities and intelligence.

Hypothesis 1a. Perceived self-deficits would have a positive effect on compensatory consumption.

Hypothesis 1b. Perceived self-deficits would have a positive effect on adaptive consumption.

2.2. Implicit Self-Theories and Self-Restore Motive

Goal orientation theory has made a distinction between validation-seeking motive (e.g. self-defense) and growth-seeking motive (e.g. self-enhancement) (Dykman, 1998). The different motive types help explain why individuals resort to different consumption patterns when experiencing self-deficits. This is dependent on the implicit theories people hold about themselves. Implicit self-theories made a distinction between individuals believing relatively fixed characteristics on human's personalities (entity theorists) and individuals believing malleable characteristics on human's personalities (incremental theorists) (McConnell, 2001). Prior research has shown that the two types of implicit

theorists would exhibit different coping strategies (Dweck, Chiu & Hong, 1995). Therefore, we speculate that experiencing self-deficits would activate different coping reactions for entity theorists and incremental theorists, respectively, and therefore, lead to different consumption preferences.

Hypothesis 2. Perceived self-deficits would activate the motive to *self-defend* for *entity-theorist*s, while activating the motive to *self-enhance* for *incremental-theorist*s.

Hypothesis 3. Experiencing self-deficits would increase *compensatory* purchase intention for *entity-theorist*s; while increasing *adaptive* purchase intention for *incremental-theorist*s'.

Hypothesis 4. The effect of self-deficits on *entity-theorist*s' *compensatory* preference is mediated by the motive to *defend*; whereas the effect on *incremental-theorist*s' *adaptive* preference is mediated by the motive to *enhance*.

2.3. The Moderated Role of Opportunity for Self-Recovery

Prior research has shown that the effects of self-deficits on compensatory consumption would be mitigated when an alternative opportunity to regain the self-esteem was present. In particular, if given an opportunity for self-recovery, consumers' identity-based motivation to self-reconciliation and their willingness to make further consuming decision would be weakened because of the devaluation effect (Brendl et al., 2014) as the objects became unrelated to the focal needs. Therefore, we speculate that the effects of self-deficits on both compensatory consumption and adaptive consumption would be diminished when there exists an opportunity to regain the self-esteem.

Hypothesis 5. The effect of self-deficits on the motives to self-restore and purchase intention would be mitigated when a self-recovery opportunity is present, compared to when there is no self-recovery opportunity.

3. Method and Results

Two separate studies were set up to examine the abovementioned hypotheses respectively. The first

study examined the main effect of self-deficits and the moderated effect of implicit self-theories, as well as the mediating effects of motive types on consumption preference; whereas the second study examined the moderating effects of self-recovery opportunity on motive types and thus purchase intention. All the samples come from Chinese consumers.

In Study 1, among 149 valid responses, females accounted for a slightly higher portion (56%). And over 80% of the participants were ageing between 21 and 29. As for education, over half of them were from Bachelor's degree and one third of them had Master's or higher degree. Four separate one-way ANOVAs revealed the self-deficits' main effects on motive to self-restore and purchase intention were all significant. Then, Table 1 revealed the significant results for two-way ANOVAs that the simple main effects of self-deficits on entity-theorists' compensatory preference and incremental-theorists' adaptive preference were both significant (F (1,67) = 6.22, p = 0.015; F (1,72) = 8.28, p = 0.005). Further, Process Model partially supported that entity-theorists' purchase intention for compensatory products could be motivated by self-defending; whereas for incremental-theorists. Thus, H4 was partially supported

In Study 2, with 141 valid responses, the sample exhibited similar demographic distribution with Study 1. Four separate two-way ANOVAs revealed that in self-deficits condition, both consumers' motive to self-restore (self-defense vs self-enhancement) and purchase intention (compensatory vs. adaptive) were significantly mitigated when having a self-recovery opportunity. Further, Process Model supported that the attenuation of compensatory and adaptive preference was driven by the reduced motives to self-defend and to self-enhance for consumers in self-deficits who received a recovery opportunity.

4. Discussion

To conclude, we made a distinction between two types of self-restorative consumption patterns, showed the main effects of self-deficits, showed the moderating effects of implicit self-theories, revealed the mediating role of motive types, and identified the boundary condition by showing the attenuation effect. Theoretically, our findings enriched the knowledge of the effects of self-deficits on consumption, and how implicit theories lead to different coping strategies in consumption domain.

Managerially, products to resolve self-discrepancies are playing an increasingly important role in self-value realization, especially in the modern society with high material life satisfaction. The present finding would help answer two important questions: How to target consumers with different products? To what extent would the marketing activities such as prior free trial work for different consumers?

In the future, we aim to replicate the studies with different types of deficits and self-theories to validate the power of the findings, and to rule out alternative explanations that accounts for the effect. Further, we aim to conduct the studies with samples from other countries, in order to figure out cultural differences in this consumption domain.

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Appendix

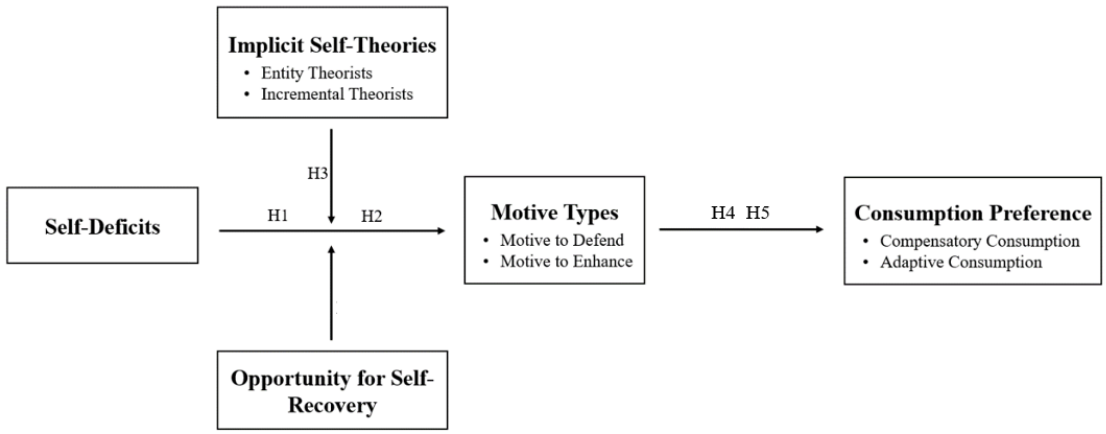

Figure 1. Research Framework

Table 1. Three-way Interaction Effects on Purchase Intention (ANOVA Results)

	Compensatory Consumption			**Adaptive Consumption**		
Deficits Manipulation	**Entity-theorists**	**Incremental-theorists**	Total	**Entity-theorists**	**Incremental-theorists**	Total
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Self-deficits	4.08 (1.62)	3.14 (1.71)	3.58 (1.72)	3.71 (1.72)	4.40 (1.69)	4.07 (1.73)
No-deficits	3.06 (1.79)	2.74 (1.30)	2.90 (1.71)	3.62 (1.65)	3.29 (1.73)	3.46 (1.69)
Total	3.60 (1.77)	2.96 (1.68)	3.27 (1.75)	3.67 (1.68)	3.91 (1.79)	3.79 (1.73)

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An Empirical Study on Environmental Disclosure, ESG Rating, and Green Accounting

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An Empirical Study on Environmental Disclosure, ESG Rating, and Green Accounting

1. Research Purposes

There are longstanding and increasing governmental and academic interests in why companies show their propensity for good environmental, social, and governance (ESG) practices (Huang, 2021). This research project aims to add to the existing literature concerning the relationships among the important emergent awareness of the environment, social and governance, and resulting green accounting disclosure. Though research in the ESG field has caught much academic attention in recent years, there are many cross-disciplinary areas for further exploration, such as green finance and green accounting disclosure related to the ESG. In finance, an increasingly significant way of achieving quality green financial performance and environmental investment. Corresponding to the upgraded scale of green investment, their impact on accounting disclosure has become a crucial concern to the accounting profession.

To be specific, this study is designed to examine the constructs of ESG disclosure and ESG rating for the Chinese listed companies and investigate whether they are related to corporate financial performance. First, we test whether the existing environmental disclosure and environmental investment can proxy for ESG disclosure in corporate ESG rating. We examine the main effect of ESG disclosure on corporate financial performance. We test whether corporate financial performance is significantly correlated to environmental disclosure and environmental investment. Lastly, we investigate whether ESG rating moderates the main effect of ESG disclosure on corporate financial performance.

2. Contributions and Implications

This paper contributes to the existing ESG literature in manifold ways: 1) Verify the validity of the existing constructs of 'green' disclosure (i.e., environmental disclosure and environmental investment) and ESG rating; 2) Explore the possibility that environmental disclosure and environmental investment proxy for ESG disclosure in corporate ESG rating; 3) Verify the moderation of ESG rating in the main effect of ESG disclosure on corporate financial performance.

3. Research Questions

Using a sample of Shanghai and Shenzhen Stock Markets, we intend to answer the following research questions: 1) Do the concepts of ESG disclosure, environmental investment, and ESG rating work well to capture the essence of ESG conceptualization? 2) Can environmental disclosure and corporate environmental investment proxy for ESG disclosure in corporate ESG rating? 3) Is environmental disclosure significantly associated with positive corporate financial performance? 4) Is environmental investment significantly associated with positive corporate financial performance? 5) Does ESG rating moderate the main effect?

4. Literature Review and Research Hypotheses

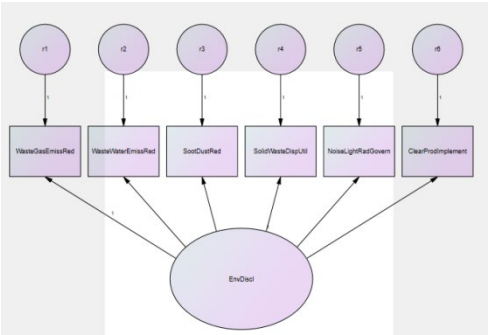
4.1 Green disclosure and ESG rating

UNPRI defines responsible investment as "the strategy and practice of integrating environmental, social and Governance (ESG) factors into investment decisions and active

ownership", and is committed to understanding the investment impact of the three main issues based on ESG factors, and further promoting more responsible investment practices (UNPRI, 2022). Currently, ESG is associated with three aspects, that is, ESG disclosure, ESG evaluation, and ESG investment, and they are interrelated. A firm is mandated or volunteers to disclose the relevant information or content defined in the ESG reporting framework, then the rating agency evaluates the ESG information disclosed by the firm. And finally, investors make well-informed investment decisions based on the ESG rating results, to optimize the economic and social values of investment.

Many leading publicly traded firms are releasing more information about their ESG efforts. However, in the absence of a structured framework to report and monitor firms' ESG efforts, the burden lies on companies to communicate their initiatives and on investors to research them. There are major rating agencies that emphasize the financial impact of ESG factors when measuring a company's ESG performance: RobecoSAM, Sustainalytics, and Thomson Reuters. Considering only ratings that agree on a definition of ESG performance allows us to concentrate on the different ways agencies measure ESG factors and the methodologies they use to aggregate them into a single score (Lopez et al., 2020). That is where the ESG rating has been originated.

In this paper, we first use factor analysis to verify the validity of CSMAR's 'green' concepts of environmental disclosure, environmental investment, and ESG rating. As environmental investment is measured at the dollar value or quantity of green projects invested in environmental protection, we test the hypothesis assuming the validity of CSMAR's environmental disclosure and ESG rating with the following two CFA models:



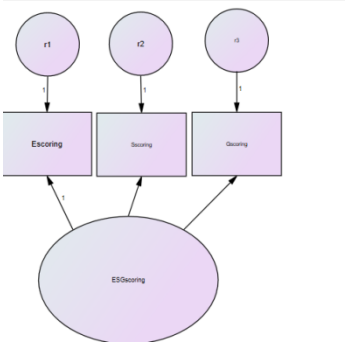


Figure 1: CFA Model for Environmental Disclosure **Figure2: CFA Model for ESG Rating**

4.2 Green disclosure and corporate financial performance

Green accounting, also referred to as environmental accounting, extends corporate reporting to a new scope of combined environmental and economic accounting disclosure, to capture the long-term sustainability of economic performance, undermined by environmental impacts. Green accounting contributes to the management of environmental and operational costs of natural resources and succeeds in defining and measuring the environmental sustainability of the economic activity (P. Bartelmus, in Reference Module in Earth Systems and Environmental Sciences, 2013).

Halbritter and Dorfleitner (2015) contribute to the investigation of the link between corporate social and financial performance based on environmental, social, and corporate governance (ESG) ratings and the existing empirical evidence about this relationship. Hachenberg and Schiereck (2018): The young growing market for green bonds offers investors the opportunity to take an explicit focus on climate-protecting investment projects. Valuation of natural resources is an

essential input into both social cost-benefit analysis and some approaches to environmental accounting. carry out natural resource accounting for important sectors like forests, water, and ecosystem services (Iyyanki V. Muralikrishna, Valli Manickam, in Environmental Management, 2017). Rounaghi (2019) states that green accounting is a type of accounting that attempts to factor environmental costs into the financial results of operations. Nowadays, most companies are facing environmental issues and are seeking an appropriate way to report and disclose the information to the public. The environmental pollution issue is among the most important problems of today's human society. Therefore, this is very important to use environmental accounting as an attempt towards protecting the environment.

As the economic measures and consequences of green accounting indicate sustainable growth, which means achieving both long-term sustainable social development and green ecological growth, we intend to test the main effect of green disclosure on corporate financial performance and use environmental disclosure and environmental investment as proxies for green disclosure respectively. Therefore, we propose the following research hypotheses:

H1: There is a significantly positive correlation between ESG disclosure and corporate financial performance indicators, i.e., ROA/E, EBIT, Tobin Q, and PB/E ratios.

H1a: There is a significantly positive correlation between environmental disclosure and corporate financial performance indicators, i.e., ROA/E, EBIT, Tobin Q, and PB/E ratios.

H1b: Corporate environmental investment is significantly associated with corporate financial performance indicators, i.e., ROA/E, EBIT, Tobin Q, and PB/E ratios.

4.3 Green disclosure, ESG rating, and corporate financial performance

se three components of the ESG rating model, are obtained from *CSMAR ESG Rating Dataset* (ESG 个股评级统计表), both environmental disclosure and environmental investment from *CSMAR Environmental Studies on Listed Companies* (上市公司环境研究), and corporate financial performance indicators from *CSMAR Financial Data for Listed Companies* (上市公司财务状况研究). The following table summarizes the sample sizes for the variables of this study.

Table 1: Data collection

Variables	Sample Size Available	Notes
EN_DISCL	3766	CSMAR includes environmental disclosure for 2019
EN_INVEST	183	183 firms identified with eco-investments in 2019
ESG_RATE	800	800 firms included in the 2019 CSMAR's ESG rating
CFP	790	Financial data corresponding to ESG-rated firms in 2019

4.2 Research variables

All the research variables used in this study are listed in the following table.

Table 2: Research variables

Variables	Description	Source/Measurement
EN_DISCL	*Description of corporate environmental disclosure content*	*CSMAR 上市公司环境研究 Constructed from 6 following dimensions*
WasteGasEmissRed	Reduction in waste gas emission	CSMAR 上市公司环境研究
WasteWaterEmissRed	Reduction in wastewater	CSMAR 上市公司环境研究
SootDustRed	Reduction in dust pollution	CSMAR 上市公司环境研究
SolidWasteDispUtil	Reduction in solid wastes	CSMAR 上市公司环境研究

NoiseLightRadGovern	Reduction in noise, light & radiation	CSMAR 上市公司环境研究
ClearProdImplement	Implementation of clean products	CSMAR 上市公司环境研究
EN_INVEST	*$ Input in environment*	*CSMAR 上市公司环境研究*
ESG_RATE	*Overall ESG score for a firm*	*CSMAR ESG 个股评级统计* *Constructed from 3 following dimensions*
E_RATE	Environmental score for a firm	CSMAR ESG 个股评级统计
S_RATE	Social score for a firm	CSMAR ESG 个股评级统计
G_RATE	Government score for a firm	CSMAR ESG 个股评级统计
CFP	*Corporate financial performance*	*CSMAR 上市公司财务状况研究* *6 CFP varialbes selected*
ROA	Return on total assets	CSMAR 上市公司财务状况研究
ROE	Return on equity	CSMAR 上市公司财务状况研究
EBIT	Earnings before interest and taxes	CSMAR 上市公司财务状况研究
Tobin_Q	A firm is over- or undervalued	CSMAR 上市公司财务状况研究 Market value divided by replacement cost
PB	Price-to-book ratio per share	CSMAR 上市公司财务状况研究
PE	Price-to-earning ratio per share	CSMAR 上市公司财务状况研究

Two CFA models are used to analyze the validity of the CSMAR constructs for environmental disclosure and environmental investment (see Section 4.1 for details).

To test the research hypotheses H1s, H2, and H3, we use the following regression models:

$GREEN_i = \alpha + \beta_i CFP_i + \gamma,$ (Model 1)

in which, $GREEN_i$ refers to EN_DISCL, EN_INVEST, and CFP_i refers to ROA/E, EBIT, Tobin Q, and PB/E ratios.

$ESG\_RATE_i = \alpha + \beta_i CFP_i + \gamma,$ (Model 2)

in which, CFP_i refers to ROA/E, EBIT, Tobin Q, and PB/E ratios.

$CFP_i = \alpha + \beta_i GREEN_i + {}_i\ \beta_i\ \ GREEN_i{*}ESG\_RATE_i + \gamma,$ (Model 3)

in which, $GREEN_i$ refers to EN_DISCL, EN_INVEST, and CFP_i refers to ROA/E, EBIT, Tobin Q, and PB ratios.

4.3 Software used

In this study, SPSS version 22, including AMOS 22, is used to process the data and test models.

5. Empirical Results and Findings

The CFA results for environmental disclosure (EnvDisclosure) are as follows:

Result (Default model)

Minimum was achieved

Chi-square = 1225.541

Degrees of freedom = 10

Probability level = .000

Table 3: Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
WasteGasEmissRed	<---	EnvDisclosure	1.000				
WasteWaterEmissRed	<---	EnvDisclosure	.829	.008	104.364	***	
SootDustRed	<---	EnvDisclosure	.518	.008	67.034	***	
SolidWasteDispUtil	<---	EnvDisclosure	.633	.008	77.933	***	
NoiseLightRadGovern	<---	EnvDisclosure	.425	.007	64.683	***	
ClearProdImplement	<---	EnvDisclosure	.261	.007	39.924	***	

Table 4: CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	11	1225.541	10	.000	122.554
Saturated model	21	.000	0		
Independence model	6	9073.262	15	.000	604.884

Table 5: RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.259	.922	.837	.439
Saturated model	.000	1.000		
Independence model	.153	.454	.236	.324

Note: Sample size = 3766

The CFA results for ESG rating (expressed in ESGscoring) are as follows:

Table 6: Regression Weights: (Group number 1 - Default model)

This model is recursive.

			Estimate	S.E.	C.R.	P	Label
Escoring	<---	ESG	1.000				
Sscoring	<---	ESG	1.061	.069	15.274	***	
Gscoring	<---	ESG	.342	.025	13.513	***	

Table 7: CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	6	.000	0		
Saturated model	6	.000	0		
Independence model	3	724.869	3	.000	241.623

Table 8: RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.000	1.000		
Saturated model	.000	1.000		
Independence model	.633	.638	.277	.319

Note: Sample size = 800

Table 9 :Empirical test for H1

Variable	Model 1a			Model 1b		
	B	Beta	Sign.	B	Beta	Sign.
(Constant)	0.363		<.001	0.363		0.806
TotalROA	**-1.768**	**-0.195**	**0.067**	**-**	**-**	**-**
EBIT	8.016E-13	0.018	0.656	-7.172E-06	-0.028	0.752
ROE	**1.192**	**0.195**	**0.036**	**-866114.378**	**-0.027**	**0.809**
TobinQ	**0.07**	**0.313**	**0.005**	**-78737.796**	**-0.051**	**0.738**
PB	**-0.041**	**-0.259**	**0.009**	**181165.462**	**0.158**	**.318**
PE	1.971E-05	0.009	0.811	-51.845	-0.002	0.986
Valid N	790				183	
In Model b, we delete the independent variable TotalROA to account for covariance Model 1a:GREENi refers to EN_DISCL Model 1b:GREENi refers to EN_INVEST						

Model 1 shows that ROA, ROE, TobinQ and PB are support the hypotheses 1 and hypotheses 1a. Among them, EN_DISCL and ROA is significant and there is a positive correlation between them.EN_DISCL and ROE is highly significant and there is a positive correlation between them. EN_DISCL and TobinQ is more significant and there is a positive correlation between them. EN_DISCL and PB is highly significant and there is a negative correlation between them. When ROA, ROE and TobinQ increase, EN_DISCL also increase. When PB decrease, EN_DISCL also decrease. Model 1 shows that there is a significantly positive correlation between environment disclosure and part of the corporate financial performance indicators, there is a significantly negative correlation between environment disclosure and PB. Model 1 also shows that there is no significant between invest and CFPi because the sample of the company invest is too small, this can't support whether the hypotheses 1b is true.

Table 10 :Empirical test for H2

Variable	Model 2		
	B	Beta	Sign.
(Constant)	1.776		<.001
TatolROA	1.036	0.05	0.631
EBIT	**1.742E-11**	**0.172**	**<.001**
ROE	-0.304	-0.022	0.811
TobinQ	0.016	0.032	0.772
PB	-0.038	-0.106	0.281
PE	-2.152E-05	-0.005	0.907
Valid N	800		

Model 2 shows that ESG scoring and EBIT is extremely significant, there is a positive between them and the ESG invest and EBIT is extremely significant. Two result confirm that hypotheses 2 is true .

Table 11: Empirical test for H3

Variable	Model 3a			Model 3b		
	B	Beta	Sign.	B	Beta	Sign.
(Constant)	0.042		<.001	0.073		<.001
EnvDiscl	-0.018	-0.099	0.107	-0.089	-0.128	0.037
EN_DisclxESGscor	**0.009**	**0.116**	**0.059**	**0.037**	**0.124**	**0.043**
Valid N	790			790		
Model 3a:GREENi refers to EN_DISCL, CFP refers to ROA Model 3b:GREENi refers to EN_DISCL, CFP refers to ROE						

Variable	Model 3c			Model 3d		
	B	Beta	Sign.	B	Beta	Sign.
(Constant)	1.471		<.001	2.682		<.001
EnvDiscl	**0.092**	**0.022**	**0.719**	**0.047**	**0.008**	**0.898**
EN_DisclxESGscor	**0.038**	**0.021**	**0.731**	**-0.006**	**-0.002**	**0.969**
Valid N	790			790		
Model 3c:GREENi refers to EN_DISCL, CFP refers to TobinQ Model 3d:GREENi refers to EN_DISCL, CFP refers to PB						

Variable	Model 3e		
	B	Beta	Sign.
(Constant)	3435345976.5		<.001
EnvDiscl	**-4134689977.431**	**-0.19**	**0.004**
EN_DisclxESGscor	**2582529186.2**	**0.263**	**<.001**
Valid N	790		
Model 3e:GREENi refers to EN_INVEST, CFP refers to EBIT			

Model 3 shows that ROE and EN_DISCL is more significant, there is a negative correlation between them. EN_DISCL* ESG scoring is significant with ROE, EN_DISCL* ESG scoring strengthens the relationship between ROE and EN_DISCL, the result confirm that hypotheses3 is true.

6. Summary and Conclusions

This paper contributes to the existing ESG literature in manifold ways: 1) Explore the possibility that environmental disclosure and environmental investment proxy for ESG disclosure in corporate ESG rating; 2) Verify the moderation of ESG rating in the main effect of ESG disclosure on corporate financial performance.

This paper explore the problems about the impact of international ESG rating on green accounting

practices of Chinese enter and the empirical links between ESG regulations and actual CSR reporting and ESG disclosure, as well as ESG integration into green accounting practices. But the hypotheses 1b hasn't been solve yet, this paper can't reflect the relation between the company environment investment and the corporate financial performance indicators. What's more, this study adds to the existing literature on the important emergent awareness of environment, society and governance, and the resulting green accounting disclosure, which also raises the importance of green accounting disclosure in Chinese enterprises. It is hoped that this study can help more enterprises understand and implement ESG rating and green accounting disclosure. At the same time, we hope to attract the attention of the government and further improve the ESG rating structure.

7. Limitations and Suggestions for Future Studies

Due to the late start of ESG disclosure and practice, this paper still have some problems. These results must be interpreted with caution and a number of limitations should be borne in mind.

First, lack of reliable data; inadequate data disclosure by most companies makes the valid sample size very small, e.g. EN_DISCL has an available sample size of 3,766, while the corresponding available sample size for ESG_RATE is only 800 and the available sample size for EN_INVEST is only 183. Second, lack of a well-developed ESG rating system; China's ESG rating system is not yet well developed and the existing ESG rating system may not reflect well the actual ESG level of Chinese companies. Third, lack of existing literature; the development of green accounting in China started late compared to some developed countries, like European countries. We lack research literature on green accounting based on the Chinese context.

In order to further improve this study, the following suggestions are made for future research. Firstly, Strengthen the regulation of companies and allow more companies to disclose their ESG-related data, so that ESG investors or researchers can gain a deeper understanding of the actual ESG level of companies. In the meantime, we also hope that the Chinese government will strengthen its political guidance to attract more people to engage in green accounting research, thereby improving the literature base in the field of green accounting in China and improving the ESG rating system in line with China's national conditions.

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Analysis of Born Global Companies by Revised Version of Eclectic (OLI) Paradigm

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Analysis of Born Global Companies by revised version of Eclectic (OLI) Paradigm

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Extended Abstract

International business research often puts focus on Multinational Enterprises (MNEs) in the manufacturing industries because those are the primary and major participants involved in Foreign Direct Investment (FDI). Although MNEs have been the most cited targets for analysis of FDI, current trends have been putting focus on "BGC (Born Global Company)". In response to such change, the revised version of Eclectic Paradigm was proposed seven (7) hypotheses by introducing Dynamic and Cyclic Concept. In this paper, we use this revised version of Eclectic Paradigm as analytical framework for two cases of BGCs.

Keyword: BGC (Born Global Company), Eclectic (OLI) Paradigm, Dynamic and Cyclic Concept

1. Introduction

In recent years, startup-companies that have entered into global business have emerged shortly after their founding. It is called "BGC (Born Global Company)". Generally speaking, many companies are doing businesses "first in domestic, later in abroad". After a long period of domestic business, there is a gradual internationalization that goes through the stage of international trade (export) and technology licensing, and finally moving to FDI (foreign direct investment) in local production and local R&D. On the other hand, BGCs are characterized by aggressive global expansion called "suddenly overseas", such as entering one or many overseas markets immediately after founding and the establishing multiple foreign subsidiaries. It is noticed that emerging BGCs control business models, even though it is necessary to have experience in utilizing the manufacturing equipment of major companies by outsourcing and knowledge of parts of major companies behind the rapid growth of these companies.
Examples of BGCs can be found in many Nordic countries (Denmark, Norway, Sweden, Finland, etc.) and Silicon Valley in the United States. In Japan, the drive for overseas expansion has become less aggressive due to the policy of shifting to domestic demand, but the limit to the domestic market has surfaced, and it has become necessary to seek a way out of the country. There is also a group of companies called "Born-again Global Firm", which has grown rapidly in the foreign market by companies with a history of devoted to domestic business until then (Nakamura, 2015).
In this paper, BGC is defined as "a startup business or SMEs (small and medium-sized enterprises) that develops overseas business within 2 or 3 years after its founding".

2. Literature Review and Hypothesis

2.1 Research on BGCs

With the rise of BGCs, research to analyze strategic behavior has increased rapidly in recent years. In Northern Europe, the domestic demand is small because the population is small, but since it has high technology, technology-intensive and high value-added industries such as IT, biotechnology, pharmaceuticals, health industry, energy and environment have developed business on the premise of foreign market. BGC is a combination of these three characteristics; "Startup and SMEs", "high-tech startups" and "global companies".

Research on BGC is centered on Northern Europe, North America, and Australia, and includes (1) Stages model, or Incremental International-resolution Approach, (2) Resource-based approach (RBV: Resource Based View, or Combining resources and recycling technologies), and (3) Network approach Theory, (4) Entrepreneurial approach (Entrepreneurship perspectives). In Japan hitch BGC are analyzed (Fujisawa, 2005; Takai, 2007; Nakamura, 2008; Shima, 2006). Some studies have listed the role of the government and its relationships (*Guanxi* network) as factors in China (Madsen and Serbais, 1997).

Guohua et al., (2019) has been searching for research papers (167 papers) of 28 famous journals on BGC/INV (international new ventures) for the past 20 years or so. BGCs are considered a phenomenon in these papers, but they have not yet reached a theoretical agreement.

2.2 Dunning's Eclectic (OLI) Paradigm

Companies looking for the best way to enter a foreign market can choose from a number of options. Options include exports, FDI, and franchise (or licensing) contracts. The Eclectic (OLI) Paradigm (Dunning, 1979, 1988, 1993) is as a meta-framework for the analysis of international business (IB) activities (Cantwell, 2015). Dunning's Eclectic paradigm (OLI paradigm) consists of three special elements: (O) Ownership-specific advantage, (L) Location-specific advantage, and (I) Internalization. Therefore, we call Eclectic paradigm as OLI paradigm as well.

"Ownership-specific advantage" refers to the company's intangible assets, such as technology, knowledge, know-how, product differentiation capabilities, etc. which is almost same as FSA (firm-specific-advantage) by Hymer (1960). Such intangible assets are identified as offering an advantage over those existing local competitors. If it is more efficient to use such intangible assets within the home country, export is selected. However, if it is more advantageous to use such assets in a foreign country, FDI (owned subsidiary) is selected. When the company's intangible assets are considered to be comparatively more advantageous in the foreign country than in the domestic (source) country, the resulting "advantage" is identified as being a specific advantage of the foreign location. If this intangible asset transaction is not available through the market, the company attempts to own its own subsidiary in a foreign country. Incidentally, options that are not FDI include licensing and franchising.

2.3 Revised version of Eclectic (OLI) Paradigm and Seven Hypotheses

Let's consider the Dynamic and Cyclic concept to Eclectic (OLI) Paradigm in analyzing BGCs. If seven hypotheses (1) to (7) can be well discussed, revised version is considered as appropriate.

(1) *H1:* Ownership Advantage may not necessarily by own resources.

The concept of Ownership Advantage is based on own resources, such as founders' entrepreneurship, experience, know-how, etc. as noted by Teece (2014) and Hennart (2009). However, it is enhanced by obtained from others (e.g., M&A). This is quick way to obtain it in cooperation with other companies by licensing, franchising, strategic alliance (Mathows, 2002). BGC may not fully accumulate the "superiority of ownership"(FSA), but can be successfully combined from others, and can be incorporated into business plans using an international network in the early stages of its founding.

(2) *H2:* Internalization Advantage defines the entry mode, such as FDI, licensing/franchising etc.

When a company considers internationalization, they do not necessarily choose FDI from the beginning, nor do they consider only specific countries. Combination of entry mode and targeted country is flexible. "Choose FDI" when a firm can enjoy "I: the superiority of internalization" as a choice of foreign business. In addition to choosing FDI, there are also other options such as franchises. It is easier to see that "O-L-I three-item cycle" is formed during the execution process. In some cases, the company may transition from a joint venture subsidiary to a wholly owned subsidiary as it continues to conduct activities in a foreign country. In the case of franchising, local subsidiaries operate directly managed stores rather than directly from the parent company in their home country, and franchise them to local companies via subsidiaries using this as a model case. Thus, the method of advancement might be changed by the passage of time even in a target country.

(3) *H3:* Location Advantage is a combination of Ownership Advantage.

The usefulness of Ownership Advantage is depending on destination country (Location Advantage). This means that the approach of Location and Ownership advantages is mutually related.

(4) *H4:* Add a perspective of resource-based view (RBV) and dynamic capabilities (DC) perspective, to Ownership Advantage.

BGCs do not have rich management resources, however, analysis from a resource-based perspective (RBV: Barny, 1991) is effective. In addition, it is easy to understand the consideration from the viewpoint of dynamic capability (Teece, 2014) of how to obtain and replace limited capabilities.

(5) *H5:* The study "O→L→I" may start from anywhere of the three elements, it is sufficient to consider the three elements.

It is appropriate to consider where and how to conduct activities in foreign countries while considering the three items of "O - L - I". Therefore, it is good to start the consideration from any of the three items. Of course, three items may be considered at the same time.

(6) *H6:* The "O→L→I" study will not only be considered when entering the market, but will continue to be reviewed after entering the market.

"O→L→I" process is cyclically used. "O→I→L" may be called "OLI cycle". These three items change the situation depending on the time history, and there is also a change in the advantageous

method (FDI, trade, franchise, etc.) in the execution of overseas business, and there is also a change in the advantageous country.

(7) *H7:* Not only the target countries, but also the "O→L→I" will be considered organically integrated into other regions.

The reason for the revision is to enable dynamic analysis whereas the OLI paradigm is a static analysis. In forming a review cycle of OLI, it is easier to understand that entry into another country will also be considered. In addition, we look at countries that have already entered from an organic point of view. It can be said that companies try to understand the target country as a place to do international business individually, but as an organic combination including other target countries.

3. Case Study and Result

3. 1 Case Study

The case analyses were conducted to two Japanese BGCs: ***Terra Motors*** and ***Mercari***.

(1) Terra Motors

Tera Motors was founded in 2010 and has been developing its electric motorcycle business in Asia. In 2016, Terra Drone was established as a drone business, under Terra Group. In addition to electric motorcycles, the company is challenging to win the global market in the drone business. Founder Toru Tokushige has a vision of "creating a global Japanese company." Recognizing that the domestic market will shrink, we regard Asia, which is expected to grow, as the main market. Tera Motors co-launched three bases (including factories) in India, Nepal, and Bangladesh shortly after its founding in 2010. In each market, the electric motorcycle business took six to seven years to turn a profit.

(2) Mercari

Mercari of flea market application was founded in 2013, and in 5 years since the service started, it has exceeded 710,000 downloads (DL) and 1 million monthly users. The number of exhibits also exceeded 1 billion. In June 2018, listed in Mothers stock market and the market capitalization reached 351.6 billion yen. Mercari's group includes Mercari Co., Ltd. and its consolidated subsidiary Mercari, Inc. (as of June 30, 2019), consisting of six companies: Merpay Co., Ltd., Michael Corporation, Sozo Co., Ltd., and Merpay Ltd. (U.K.), but with the withdrawal from U.K. in July 2019, they concentrated in Japan and the United States. The development of Mercari is introduced mainly by three business owners at the time of its founding (Shintaro Yamada, Hiroshi Tomishima, and Ryo Ishizuka).

3. 2 Result

In the case of Terra Motors and Mercari, the founders have had multiple founding members participate instead of one person (H1). Especially, Mercari has continuously accepted technology development experience, startup company experience, key man of growth department in large enterprise, etc. (H1) BGCs use human resources who are familiar with the country where they are expanding, and local human resources, because the way of design and advertising is different depending on the country (H3).

In terms of funding, Terra Motors, with the help of investors, has been accepting external funds both during the initial growth period and recently. At Mercari, the founders have grown startups one after another and sold them, and the proceeds from the sale seem to have become the capital of the company's founding, but they have continued to raise external funds since the initial growth period. Recently, it has sold its unprofitable division and concentrated on its U.S. operations (H6).

As a management resource for products and equipment, Terra Motors does not have a production and R&D site in Japan, and utilizes its own factories and cooperating companies overseas (H2). Mercari has a distribution with an application development base and a customer center (Sendai, Fukuoka) in Japan. About 80% of the development personnel are located in and for U.S. business.

Terra Motors' main market is based on India, which can be expected to grow since its founding. At Mercari, application development sites are not only in Japan but also in the United States (H4) (H7).

Tera Motors and Mercari have wholly owned subsidiaries outside of Japan. Tera Motors and Mercari are active in the combination of local complementary resources (CLAs) that they do not possess (H3).

For considering the Dynamic and Cyclic concept to Eclectic (OLI) Paradigm in analyzing BGCs, seven hypotheses (H1) to (H7) are discussed by using two case analyses. The revised version is considered as appropriate.

4. Consideration and Conclusion

4. 1 Consideration

The revised version is considered as appropriate; however, we should include entrepreneurship.

In the early stage of BGC, the management resources possessed by the company are mainly the knowledge and experience that the founder has personally, and the knowledge and experience possessed by co-founders, early directors, and employees are also put into it. With regard financial management resources, self-funding is limited and it is necessary to raise external funds. Mercari and Terra Motors also have clear entrepreneurial spirit of the founders, and the overseas. It is considered that the entrepreneurship of the management is to summarize the elements of the stage model, resource base, and network which are the previous research.

4. 2 Conclusion

Revised version of Eclectic (OLI) Paradigm is a model that explains corporate behavior, but it the management who is making the decision of the company, and it seems to be more clearly influenced in the organization where the size of the employee is not large like the BGCs. Entrepreneurship is the key issue in BGCs, and we would like to consider how to incorporate it into the Revised version of Eclectic (OLI) Paradigm in the future, while increasing the number of case studies. In Japan, there are few BGC and unicorns, but not only financial issues but also cultural factors can be assumed, so I would like to discuss them in near future.

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Inclusive Board Representation?

Views on Diverse Directors from Hong Kong Listed Companies

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Abstract

In view of the Nasdaq's proposal of Rules 5605(f) and 5606 in December 2020, which requires board diversity and public disclosure on board-level diversity statistics, we conduct a survey with all Hong Kong listed companies of their views on diverse directors. Receiving 95 effective responses, we find that 61% of the respondents do not support the board diversity requirement, although 78% of the respondents agree to publicly disclose board-level diversity statistics. Our survey results reflect that Hong Kong listed companies are conservative to appoint LGBTQ+ directors and in general do not welcome to include more diverse directors on the board.

Keywords: board diversity, female, minor ethnicity, LGBTQ+

1. Introduction

Corporate governance is the set of rules, practices, and processes within a company that helps to direct and control the company to ensure that it operates legally and reaches its goals effectively. Issues about board matters are important topics in corporate governance because the board of directors is one of the major pillars of any corporate governance framework. We conduct a survey to investigate the understanding of Hong Kong listed companies in respect of Nasdaq's new requirement on board diversity, i.e., Rules 5605(f) and 5606, and their views on diverse directors. We receive 95 effective responses out of 2,568 listed companies in Hong Kong. Our primary findings show that 66% of the

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respondents are not aware of the Nasdaq's board diversity requirement and 61% of the respondents do not support a similar board diversity requirement to be adopted by the Hong Kong Stock Exchange (HKEX). Furthermore, 79% of the respondents do not agree that female directors could bring benefits to firm performance or corporate governance.

Our study contributes to the existing research literature on board diversity. First, our study extends this literature by showing that listed firms' perceptions in respect of the benefits of female directors are inconsistent with the empirical results. We believe that examining the reasons for the inconsistency is of particular interest to research and practice. Second, our study provides initial evidence of the views of Hong Kong listed firms on diverse directors in the context of the Nasdaq's requirement on board diversity. Finally, our study has implications for jurisdictions where the disclosure requirements on board diversity similar to those of Nasdaq are being considered for adoption, and for regulators to pay more attention to the discussion of minor ethnicity and/or LGBTQ+ directorship.

2. Background

2.1 Nasdaq's proposal of Rules 5605(f) and 5606

On December 1, 2020, Nasdaq proposed to the Securities and Exchange Commission (SEC) to advance board diversity and enhance the transparency of diversity statistics (Nasdaq 2020). The SEC approved Rules 5605(f) and 5606 on August 6, 2021, to require that most Nasdaq-listed companies, other than foreign issuers, smaller reporting companies, and companies with boards consisting of five or fewer members, to:

(i) have at least two self-identified diverse directors, including one female director and one underrepresented minority and/or LGBTQ+ director; or explain why the board does not include such diverse directors; and

(ii) publicly disclose the board diversity statistics, including gender, racial characteristics, and LGBTQ+ identity (Nasdaq 2021a, b).[1, 2]

[1] Rule 5605(f) defines underrepresented minority as an individual who self-identifies as one or more of the following: Black or African American, Hispanic or Latinx, Asian, Native American or Alaska Native, Native Hawaiian or Pacific Islander, or two or more races or ethnicities (Nasdaq 2021a). In our survey, we define a minor ethnicity director as a director who is not Chinese.

[2] Rule 5605(f) defines LGBTQ+ as an individual who self-identifies as any of the following: lesbian, gay, bisexual, transgender, or as a member of the queer community (Nasdaq 2021a).

2.2 Related studies

Board diversity aims to foster a range of demographic attributes with different characteristics in the boardroom. Indeed, factors such as age, gender, education background, cultural ethnicity, race, and even religious background have been taken into consideration in defining board diversity. Among those mentioned important attributes of board diversity, gender diversity is considered the most representative factor for the heterogeneity in the boardroom. Kang et al. (2010) state that increasing the intensity of gender diversity in the boardroom improves the power of board members in their control and strategic roles. Since the last decade, increasing focus has been placed on the board literature on how female representation on boards affects board effectiveness (Simionescu et al. 2021). Prior studies show a positive relationship between female representation on boards and board effectiveness in different perspectives, including decision-making quality and shareholders' confidence (Terjesen et al. 2009; Huang and Kisgen 2013), law compliance (Perrault 2015; Dadanlar and Abebe 2020), firm's transparency, disclosure quality, and accountability (Capezio and Mavisakalyan 2016), as well as firm performance, accounting performance and reporting quality (Chen et al. 2018; Sun and Zou 2021). Thus, it is interesting to investigate whether the perceptions of listed companies are consistent with the academic research in respect of the benefits of female directors.

3. Research Methodology and Results

3.1 Survey method

We start with all listed companies in Hong Kong as of July 2022.[3] We then make a phone call to the Investor Relation Department of all listed companies to conduct the survey. If we cannot reach a listed company with telephone, we send an email questionnaire to the company. Out of 2,568 listed companies in Hong Kong, we receive 95 effective responses. Our sample size is around 95% confidence level with a 10% margin of error. We also hand-collect the board statistics, location of principal business, and number of business segments for each sample firm. Finally, we obtain financial data from the CSMAR.

[3] The companies listing can be obtained from the HKEX's website: https://www.hkex.com.hk/Market-Data/Statistics/Consolidated-Reports. We cover companies listed on both the Main Board and GEM.

3.2 Questionnaire

The survey is divided into four sections to understand: (1) the respondents' awareness of the Nasdaq's board diversity rule, (2) their support for a similar board diversity rule to be adopted by the HKEX, (3) their agreement with benefits brought by a diverse board, and (4) their opinions about discrimination faced by diverse directors in Hong Kong. The questionnaire is composed of 16 questions: yes-no questions, multichoice questions, rating questions, and questions that ask for open-ended responses.

3.3 Empirical design

To examine whether and how firm characteristics may impact on the survey responses, we use the following logistic regression model:

$$\begin{aligned} Response = {} & \alpha + \beta_1 Location + \beta_2 ListingBoard + \beta_3 HiTech + \beta_4 Seg + \beta_5 Size + \beta_6 Lev + \\ & \beta_7 ROA + \beta_8 ContLoss + \beta_9 Big4 + \beta_{10} FemaleDir\% + \beta_{11} INED\% + \\ & \beta_{12} DirAvgAge + \beta_{13} ChairmanCEO + \beta_{14} MaleCEO + \varepsilon \end{aligned} \quad (1)$$

where $Response$ denotes the response for: (1) the awareness of the Nasdaq's board diversity rule, (2) the support for a similar board diversity requirement to be adopted by the HKEX, (3) the support for the mandatory disclosure requirement of board diversity to be adopted by the HKEX, and (4) the agreement with benefits brought by a diverse board. $Response$ takes 1 if the response is "Yes," and 0 if the response is "No." We are interested in the following firm's financial performance and corporate governance that may impact on the survey responses: the location of principal business ($Location$), whether it is Main Board-listed or GEM-listed ($ListingBoard$), whether it is a high-technology firm ($HiTech$), number of business segments (Seg), firm size ($Size$), leverage (Lev), profitability (ROA), whether it has continuous losses ($ContLoss$), whether it is audited by a Big 4 auditor ($Big4$), the percentage of female directors on the board ($FemaleDir\%$), the percentage of independent non-executive directors on the board ($INED\%$), the average age of directors ($DirAvgAge$), whether the chairman of the board is also the CEO ($ChairmanCEO$), and whether the CEO is male ($MaleCEO$).

3.4 Results

We compare the industry distribution and various firms' financial performance between our sample and the population. Overall, our sample is comparable to the population in terms of industry distribution and financial features such as firm size and percentage of loss-making firms.

3.4.1 Descriptive results

First, 66% of the respondents are not aware of the Nasdaq's requirement on board diversity. Second, 61% of the respondents do not support a similar board diversity requirement to be adopted by the HKEX, although 78% of the respondents support publicly disclosing board-level diversity statistics. Third, 79% of the respondents do not agree that female directors could bring benefits to firm performance or corporate governance, which has been empirically supported by academic research. Fourth, over half of the respondents consider that diverse directors face slight or no discrimination in Hong Kong, while they also consider that female directors face less discrimination than minor ethnicity or LGBTQ+ directors.

3.4.2 Empirical results and discussion

Next, we empirically test whether and how firm characteristics may impact on the survey responses. First, we find that firms with higher profitability are less likely to be aware of the Nasdaq's board diversity requirement. It may be because firms with higher profitability are usually in industrials and real estate industries, which are seldomly co-listed in the U.S. Thus, these firms may not be aware of the Nasdaq's rule. Second, we find that firms with male CEO tend not to welcome the board diversity requirement. It reflects that an elite group of male directors maintain their power and thus may not want to share the boardroom (Singh and Vinnicombe 2004; Joecks et al. 2013). Third, we find that firms with more business segments or firms audited by a Big 4 auditor are more likely to welcome mandatory disclosure of board diversity. However, high-technology firms, more leveraged firms, or firms with a board consisting of older directors tend not to welcome the mandatory disclosure requirement. It indicates that Big 4 auditors have a positive effect on client firms' disclosure behavior, while high-technology firms or more leveraged firms prefer opacity in disclosure (Bhattacharya and Chiesa 1995; Zechman 2010; Fan et al. 2013; Schmidt and Wilkins 2013). Fourth, we find that firms with more segments, continuously loss-making firms, or firms audited by Big 4 auditors are less likely to consider

female directors could bring benefits to the firm (such as Huang and Kisgen 2013; Sun and Zou 2021). Yet, bigger firms agree with the academic research results that female directors could bring benefits to the firm.

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An Exploration Study of CSR Implementation Strategy on Firms Operation Performance and Market Growth

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An exploration study of CSR implementation strategy on firms operation performance and market growth

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Abstract

This study constructs a strategic conceptual model based on Corporate Social Responsibility (CSR) research topics and identifies CSR implementation strategy as the main axes to discuss the research model: "CSR implementation strategy-intangible resources advantages-business performance". The study results present the following positive significant influences: (1) Partner CSR→relationship performance; competitor CSR and society CSR→innovation performance; Partner CSR and society CSR→ CSR reputation; (2) Relationship performance determines firms' operation performance while both relationship and innovation performance help firms to grow their market; (4) Virtual contact type has positive moderating effects on the effects of employee CSR (for firms' relationships and operation performance), customer CSR (for firms' relationships, innovation, and CSR reputation), and Society CSR (for firms' innovation performance). The findings of this study provide suggestions for managers' CSR implementation strategies, the establishment of intangible resources advantages and the formulation of business management decisions.

Keywords: CSR implementation, intangible resource, CSR contact type, innovation

1. Introduction

In academia, international researchers have verified the contribution of CSR to a firm's competitive advantage and business performance. For instance, Gugler and Shi (2009) verified the effect of strategic CSR development, as well as the role that engagement with CSR plays in corporate competitiveness. Scholars also emphasize the importance of firm managers' strategies to import the CSR concept into firm operations. CSR activities may lead to competitive advantages (e.g. Jenkins

2006; Gugler & Shi 2009; Lefebvere & Lefebvre 2012; Torugsa, O'Donohue, & Hecker 2013; Vázquez-Carrasco & López-Pérez 2013; etc.) and improved performance (Torugsa, O'Donohue & Hecker 2013; Kiessling, Isaksson & Yasar 2016). In practice, the implementation dimensions of CSR are varied as they are based on firm managers' different considerations and theory bases. The access types of CSR are also divergent. According to my past CSR research (Shih 2015), firm managers consider that supplier CSR and competitor CSR affect firms' relationship performance, while customer CSR and government CSR influence innovation performance, corporate reputation and brand image. However, in terms of customer viewpoints, ethical responsibility affects consumers' perception of brand image, while both legal responsibility and philanthropic responsibility lead to customer satisfaction. Therefore, the author considers that the different perceptions between firm managers and customers obtained from CSR activities may be due to the different implementation level and varied contact types employed by firms. Consequently, the author constructs a conceptual framework to identify the determinants of a firm's intangible resource advantages and to link these factors: CSR implementation strategy with firms' intangible resource advantages, market growth and operation performance. The moderating or categorical effects of virtual/physical contact on the associations among CSR implementation activities, are also discussed.

2. Literature review

2.1 CSR implementation

Varied researchers have pointed out the importance of CSR implementation. For instance, Poter (2006) recommend that firms connect CSR to business strategy in order to enhance their opportunities to benefit society. In terms of McWilliams et al. (2006), CSR implementation may include society CSR: incorporating social characteristics or features into products and manufacturing processes; employee CSR: adopting progressive human resource management practices; environment CSR: achieving environmental performance through recycling and pollution abatement; or community CSR, such as advancing the goals of community organizations. For identifying firm managers' perception, the author considers it is important to comprehend how both the development of CSR implementation

based on a firm's foresight contributes to sustainable operations.

According to stakeholder theory, the dimensions of CSR identified by researchers include the environment, employment, supply chains (e.g. Perrini et al. 2007), owners (and their families), employees, customers, suppliers, investors, political groups, trade associations and the community (e.g. Sem et al. 2013). Morre, Slack and Gibbon (2009) divided 16 criteria for responsible business practice (RBP) into four key groupings: the governance of RBP, employees in the organization, stakeholder relationships, and external reporting and monitoring. Torugsa, O'Donohue and Hecker (2013) identified four dimensions that enable one to understand proactive CSR in firms; they are: economic proactive CSR, a social proactive CSR environment, proactive CSR and the interaction of economic, social and environmental dimensions, based on the firm's shared vision, stakeholder management and strategic proactive sources. Using stakeholder theory, Park and Ghauri (2014) developed the following CSR criteria: internal managers and employees, consumers, suppliers, investors, the media, governments and the local community. Drawing on the resource-based view, this study references these criteria and will develop a scale related to CSR implementation. In this study, employee CSR (Torugsa, O'Donohue & Hecker 2013), government CSR (Park & Ghauri 2014), partner CSR (Park & Ghauri 2014), competitor CSR (Lindgreen, Swan & Johnson 2009), customer CSR (Turker 2009) and society CSR (Liu et al. 2014) are be the focus.

2.2 CSR implementation, intangible resource advantages and performance

The benefits obtained from CSR implementation may also include: enhancing their image and reputation, improving trust; renewing market position, reformatting organizational culture, etc. (Jenkins, 2006). Moreover, CSR can be a source of innovative thinking. Integrating CSR into strategic systems can help a firm to attain competitive advantage, adding to long-term prosperity and increasing overall sustainability (Gelbmann 2010). In sum, this study intends to investigate the effects of the implementation level of firms' CSR activities (e.g. employee CSR, competitor CSR, Partner CSR, customer CSR, government CSR, society CSR, etc.) on their intangible resource advantages and operation performances. Kiessling et al. (2016) proved that CSR tends to increase firms' performance.

CSR provides direct and indirect relationships with firms' financial performance (Carroll and Shabana 2010) or otherwise (Lev et al. 2011; Kiessling et al. 2016). According to the review result of the above literature, CSR implementation may enhance firms' stakeholder relationship, stimulate firms' innovation, or increase firms' reputation identification; hence, the author considers relationship, innovation, and CSR reputation as the important firm benefits (intangible resource advantage) obtained from good CSR implementation. In order to verify the effects of CSR implementation strategy on a firm's intangible resource advantage and perceived performance, two hypotheses are submitted, as follows:

Hypothesis 1: Enterprises' CSR implementation strategies are significant determinants of the intangible resource advantages of a firm.

Hypothesis 2: Enterprises' CSR implementation strategies are significant determinants of the performance of a firm.

2.3 Intangible resource advantages and firms performance

The evolution concept of intangible resources has resulted from resource-based models, sustainable competitive advantage, dynamic and historic ability to achieve intangible resource advantage (Shih 2017). In this study, the author selects three intangible resources advantages to be conducted into the framework: relationship, innovation, and CSR reputation. Empirically, relationship performance can be regarded as the value the enterprise generates through its relationships, and judged by the relationship efficiency and effectiveness of relationship progress made (Li 2006). Successful relationships with partners (Partners, distributors, customers) offer firms various benefits, such as greater operational efficiency, reduced risks, speeding products to markets (Cavusgil 1998), and help in accessing strategic knowledge for international expansion (Pinho & Prange 2016); these determine firms' international performance (Lages et al. 2009; Hongchindaket et al. 2013). In this study, the scales submitted by Li (2006) are adopted to measure managers' perceptions of the performance of their enterprises (in comparison with their competitors) in flexible production, product/service quality, logistic costs, understanding of consumers' changing preferences, and synergy over joint sales and

marketing efforts, in terms of relationship interactions with other firms (Li 2006). Innovation can be regarded as the introduction of new products, new methods of production, the opening of new markets, and the identification of new suppliers (Wang 2014). In this study, innovation performance is adopted to capture the outcome of enterprise innovation capability, and is defined as the composition of enterprises' products and processes, as well as the overall assessment of organizational innovation (Chen et al. 2009). Innovation performance builds operation and international performance (Maranto-Vargas & Rangel 2007).

Finally, a good corporate reputation is ''a top-level factor for achieving sustained competitive advantage for the organization'' (Sanchez & Sotorrio 2007), bringing the benefit of demanding a higher price premium for company offerings (Lai et al. 2010). The advantage of corporate reputation lies in enhancing firms' international diversification (Fernández-Olmos & Díez-Vialb 2013) and performance (Kumlu 2014; Shih 2017). In this study, the author adopts the scales developed by Lai et al. (2010) and Chomvilailuk et al. (2016) to measure managers' perceptions in relation to corporate CSR reputation, in comparison with their competitors. Moreover, the author adopts the scales developed by Powell and DentMicallef (1997) to measure business operation performance, and the scale developed by Mathews et al. (2016) to measure market growth. Consequently, by integrating the viewpoints of the above scholars, this study verifies the determinate effects of intangible resources advantages (e.g. relationships, innovation, CSR reputation, etc.) on firm market growth (Mathews et al. 2016) and performance (e.g. operation performance) (Powell and DentMicallef 1997). Hypotheses 3 and 4 are submitted as follows.

Hypothesis 3: Enterprises intangible resources advantages are significant determinants of the performance of a firm.

2.4 Moderate variables

CSR communication tools could be described as: Instrumental/deliberative, or published communication/unpublished communication. For instance, CSR website, CSR report and CSR

brochure belong to instrumental published communication. Deliberative published communication tools may include weblog, social media and wiki, etc. (see Seele & Lock 2015). In practice, CSR communication can be disseminated via various channels, including CSR reports, corporate websites, CSR advertising, public relations and social media (Ettinger, Grabner-Kräuter & Terlutter 2018). Recently, some researchers have started to discuss the media employed by firms when executing CSR activities. For instance, Lunenberg et al. (2016) present that regarding the media strategy for enterprises' CSR implementation, the media reflect organizations' CSR integration not via the tone, but via the framing of the media coverage. This finding displays the importance of media choice for disclosing CSR activities. When CSR contact type is used as a moderating variable, it will be found that varied types had significant effects on the performance of enterprises' intangible and operation results (see Lunenberg et al. 2016; Ettinger et al. 2018).

Hypothesis 4: Enterprises CSR contact types moderate the effects of CSR implementation on firms market growth.

Hypothesis 5: Enterprises CSR contact types moderate the effects of CSR implementation on the operation performance of a firm.

3. Research methodology

3.1 Research framework

The research framework is as Figure 1. Factors identified as influential in the literature review are introduced into the models. We assumed the following before developing the CSR implementation: intangible resource establishment and an operation strategy for Taiwanese firms. Firms need to define their CSR implementation and communication types, intangible resource advantages, operation performance and market growth. Based on the CSR implementation and communication types, intangible resource advantages of the target firm, a firm can determine its operation performance and market growth.

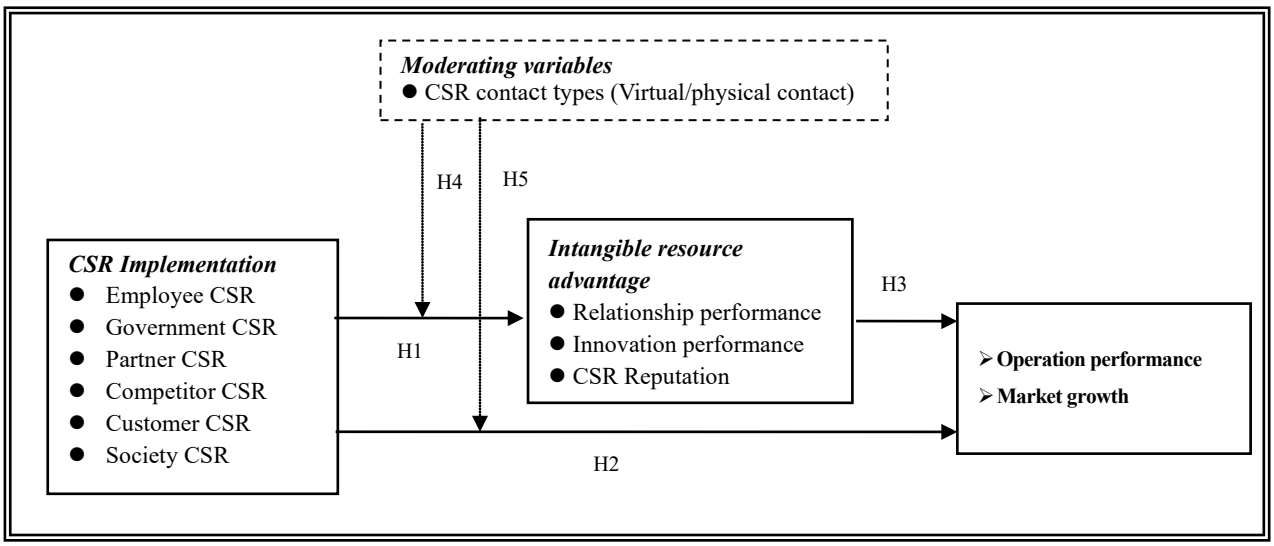

Figure 1. Research Framework

3.2 Sampling and survey methodology

This study selected Taiwan's financial industries, electronic information and technology industries as the sampling targets. The research invites targeted respondents to answer the questionnaire based on different considerations that relate to CSR implementation, CSR communication, intangible resource advantage, market growth, and operation performance. In total, 207 responding firms make up the sample in this study thus far. The questionnaires were distributed to the sampling targets by Internet, phone, mail, or face-to-face interviews in terms of several research assistants. Data analysis methods used in this research include descriptive statistics, factor analysis, correlation analysis, Linear regression method and Univariate analysis.

4. Study findings

4.1 Factor and validity analysis and correlation analysis

The discussion factors in this study include CSR implementation (Employee CSR (EmCSR), Government CSR (GoCSR), Partner CSR (PaCSR), Competitor CSR (CmCSR), Customer

CSR (CuCSR), Society CSR (SoCSR)). Intangible resource advantage (relationship performance, innovation performance, CSR reputation), and performance (market growth (MG) and operation performance (OP)). The results of factor analysis and reliability analysis are listed in Table 1. As the table shows, all the eigenvalues of factors exceed 1, while Cronbach's α value for every factor exceeds 0.7. These results show acceptable validity and reliability of the dimension factors.

Table 1 Factor analysis and validity analysis of discussion factors.

Factors	Eigenvalues	Cronbach's α
CSR implementation		
Employee CSR (EmCSR)	3.051	0.832
Government CSR (GoCSR)	2.490	0.879
Partner CSR (PaCSR)	2.496	0.792
Competitor CSR (CmCSR)	2.749	0.847
Customer CSR (CuCSR)	1.995	0.747
Society CSR (SoCSR)	2.804	0.856
Intangible resource advantage		
Relationship performance (RP)	4.491	0.906
Innovation performance (IP)	3.763	0.917
CSR Reputation (CSRr)	4.135	0.907
Performance		
Operation performance (OP)	4.068	0.943
Market growth (MG)	2.667	0.938

The correlation matrix is presented in Table 2. Some evidence of multicollinearity among the independent variables appears, such as CSR implementation dimensions, indicating some critical issues for undertaking the regression analysis. Most coefficients of correlation between two factors have a medium correlation. Some factors display high correlations, such as the correlation coefficients between market growth and operation performance, the correlation coefficients among CSR implementation dimension factors, as well as the correlation coefficients among the dimensions of intangible resource advantages.

Table 2 Correlation analysis of discussion factors.

		1	2	3	4	5	6	7	8	9	10	11
1.	Employee CSR	1										
2.	Government CSR	.540**	1									
3.	Partner CSR	.605**	.610**	1								
4.	Competitor CSR	.435**	.417**	.632**	1							
5.	Customer CSR	.690**	.677**	.637**	.464**	1						
6.	Society CSR	.588**	.459**	.679**	.580**	.500**	1					
7.	Relationship performance	.432**	.366**	.553**	.375**	.422**	.475**	1				
8.	Innovation performance	.239**	.107	.414**	.433**	.235**	.600**	.638**	1			
9.	CSR Reputation	.451**	.408**	.635**	.559**	.450**	.753**	.629**	.743**	1		
10.	Operation performance	.302**	.183**	.324**	.280**	.284**	.450**	.464**	.461**	.586**	1	
11.	Market growth	.067	.021	.258**	.249**	.211**	.236**	.469**	.532**	.362**	.464**	1
12.	Virtual-Physical level	.038	0.90	.187**	.092	.099	.189**	.132*	.197**	.163**	.095	.087

Note: Significance at the 95% confidence level. $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$.

4.2 Regression analysis results

Some dimension factors have a higher correlation in specific dimensions (e.g. CSR dimension sub-factors, etc.), thus leading to multicollinearity problems. Moreover, according to the results of correlation analysis, the relationship coefficients among all factors range from zero to 0.74. Therefore, in the regression analysis results, this study focuses on the positive effects of independent factors on dependent variables. From Table 3, the results of regression models 1 and model 2 indicate that Partner CSR (PaCSR) adds to firms' relationship resource performance (RP), while competitor CSR (CmCSR) and society CSR (SoCSR) are helpful to their innovation resource performance (IP). Model 3 suggests that Partner CSR (PaCSR), competitor CSR (CmCSR), and society CSR (SoCSR) generate firms' CSR reputation. In comparison with other factors, models 4 and 5 demonstrate that society CSR determines firms' operation performance, while partner CSR and customer CSR generate enterprises' market growth. In terms of models 6 and 7, relationship resource performance and CSR reputation lead to firms' operation performance, while relationship resource performance and innovation resource performance have a significant positive effect on firms' market growth. In models 11 and 12, responsiveness is the most important factor to spur enterprises' operation

performance, while engagement constructs their market growth. The final results from the regression models suggest partial support for *H1*, *H2*, *H3, H4*, and *H5*. The hypotheses' test results are listed in Table 6.

Table 3 Regression analysis for Taiwanese firms.

Factors	Model 1 RP	Model 2 IP	Model 3 CSRr	Model 4 OP	Model 5 MG	Model 6 OP	Model 7 MG
	B	B	B	B	B	B	B
CSR implementation							
Employee CSR (EmCSR)	0.085	-0.172	-0.090	0.020	-0.273**		
Government CSR (GoCSR)	-0.019	-0.277***	-0.013	-0.120	-0.319**		
Partner CSR (PaCSR)	0.372***	0.116	0.192**	0.015	0.223*		
Competitor CSR (CmCSR)	-0.009	0.151*	0.117*	0.012	0.110		
Customer CSR (CuCSR)	0.067	0.089	0.050	0.131	0.345**		
Society CSR (SoCSR)	0.153	0.617***	0.588***	0.411***	0.156		
Intangible resource advantage							
Relationship performance (RP)						0.158*	0.263**
Innovation performance (IP)						0.003	0.486***
CSR Reputation (CSRr)						0.489***	-0.165
Adjust R^2	0.313	0.416	0.607	0.191	0.145	0.159	0.312
Durbin Watson	1.528	1.673	1.959	1.790	1.559	1.812	1.909
F value	16.698***	25.625***	51.825***	9.163***	6.855***	16.170***	32.335***

Note: Significance at the 95% confidence level. $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$.

4.3 Moderating effects

This study examines the moderating effects of firms' CSR communication types in terms of the univariate analysis method. In Table 2, the correlation coefficients of the Virtual-Physical level on CSR implementation and other dimension factors display low correlations. After a series statistical test, this study finds some significant and positive moderating effects of VPL on the effects of independent factors (employee CSR, customer CSR, and society CSR) on dependent factors (relationship performance, innovation performance, reputation CSR, and operation performance). Other discussion factors toward intangible resource advantages and operation performance display no changeable effects when considering the moderating roles of VPL. The results suggest partial support for *H4* and *H5*.

5. Discussion and conclusion

The research constructs and verifies the conceptual models with the results derived from the questionnaires based on managers' viewpoints. Two cases studies are supplied to enrich the results of this study. Differences in CSR implementation, and intangible resource advantage in firms may affect the level of firms' operation performance and market growth. We submit several theoretical contributions and management implications as follows.

For intangible resource advantages, first, firms may focus on partner CSR implementation, which will be helpful to their target of relationship performance improvement. Second, competitor CSR, society CSR are helpful to firms' innovation performance. Third, partner CSR, competitor CSR, and society CSR help determine firms' CSR reputation. Finally, relationship resource performance and CSR reputation spur firms' operation performance, while relationship performance and innovation performance impact enterprises' market growth. Considering the direct effects of independent factors on firms' operation performance and market growth, this study finds that society CSR implementation and responsiveness generate firms' operation performance, while partner CSR and customer CSR implementation strategy are helpful to firms' market growth. The moderating effects of VPL seem to be not high, and only the effects of employee CSR, customer CSR, and society CSR on firms' relationship performance, innovation performance, CSR reputation, and operation performance display significant positive results. This means that when enterprises perform employee-, customer-, and society-related CSR implementation activities, they will obtain more positive effects on the target performance parameters by using a more virtual communication method. Most enterprises adopt both physical and virtual communication strategies when implementing CSR activities toward stakeholders. Although small moderating effects are found after study analysis, overall, a virtual CSR communication strategy is worth

being conducted in order to increase business intangible resource advantages and operation performance when performing CSR implementation.

Consequently, firms aspiring to generate high growth in a market and high performance need to make good use of CSR implementation and can further add their intangible resource advantage to help improve operation performance and market growth. In addition to brand image or reputation, CSR implementation strategy could generate satisfactory intangible and operation performances for firms. Our research raises additional questions about the importance of a CSR communication strategy and the frequency and patterns of Taiwanese firms' CSR implementation activities, communication strategy, VPL, and the relationships between discussed factors and firms' intangible and performance practices.

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Linking Institutional Theory and Nonmarket Strategy: To Understand the Political Governance Strength and Cross-border Acquisition Completion with Evidence from Chinese Acquirers

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Linking Institutional Theory with Nonmarket Strategy: to Understand the Political Governance Strength and Cross-Border Acquisition Completion with Evidence from Chinese Acquirers

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1 Introduction

Recent years have witnessed increasing interventions and sanctions imposed by host countries upon inward direct investments, due to the protectionism and national discrimination in some states. Firms cannot predict such political hindrance, let alone adopting effective responses to reverse the risky situation. However, firms can take some observable factors into considerations in advance before making foreign investment decisions. In this study, we examine political governance strength at the host-country level and international level, using Chinese acquirers' cross-border acquisition deals as the sample, and find that the political governance strength has significant effects upon cross-border acquisition (CBA) completion. Stronger political governance in host countries significantly improve the likelihood of CBA completion. The international-level collaborations between home and host countries enhances this positive effect. However, the state ownership of acquirer firms weakens it. To summarize, firms can pay attention to political governance strength, which are more observable and objective than unpredictable behavior of host governments, in order to increase the success likelihood of CBA. Our study also contributes to the linkage of institutional theory and nonmarket strategy in the cross-border context.

Keywords: institutional theory; nonmarket strategy; cross-border acquisition; political governance; state-owned enterprises

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2 Literature and Framework

2.1 Literature- three parts:

Institutional theory

Nonmarket strategy

Cross-border acquisition

2.2 Framework

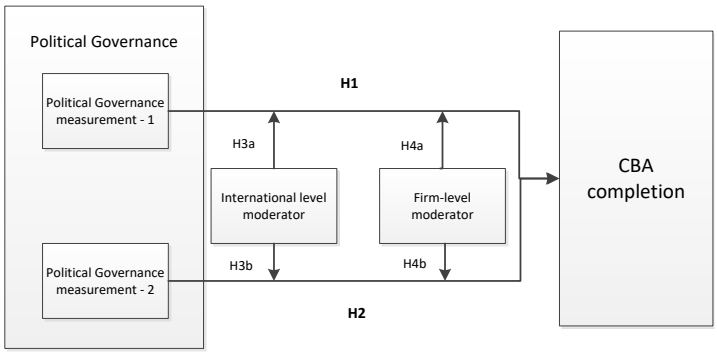

Figure 1 Hypotheses

3 Methods and ResultsData and Sample

This study seeks to ascertain the effects of political governance strength upon the likelihood of CBA completion. We take a sample of cross-border acquisitions conducted by Chinese listed firms listed in Shanghai Stock Exchanges and Shenzhen Stock Exchanges

3.2 Variables and Measurement

3.2.1 Dependent variable

Our dependent variable is the likelihood of cross-border acquisition completion. It is calculated by Cox model using two aspects of information-(1) *Acquisition Completion* and (2) *Acquisition Duration*.

3.2.2 Independent variables

3.2.3 Moderating variables

3.2.4 Control variables

3.2.5 Estimation methods

In studies on international acquisition, logistic regression model and linear regression model are widely used to completion and duration examination. By using cox model, we combine the information of Acquisition Completion and Acquisition Duration and reflect them as a whole-the likelihood of Cross-border Acquisition Completion.

$$h(t|x) = h0(t) \exp(x'\beta)$$

4 DISCUSSION

This study was motivated by the phenomenon of increasing failure of Chinese firms' CBAs. Especially, it shows a trend that more of them are not caused by market forces such as capital cost or financing difficulties, but by nonmarket factors. Confronting such uncertainty from nonmarket environment, the Corporate Political Activities would entail different performances under heterogeneous context. Specifically, CPAs are the interaction between firms and agents from government sides. Therefore, we are interested in digging out the factor(s) that has these characteristics: (1) have heterogeneous levels in different host countries; (2) are embedded in the political environment; and (3) existed in the process of firms' interacting with the government sides. For this aim, we suggested that political governance is the most related determinant satisfying the three requirements in our research. Starting from the linkage of institutional theory and nonmarket strategy, we found empirical support (H1 and H2) for the positive effect of political governance strength in host countries upon the likelihood of CBA completion.

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Cross-border Mergers and Acquisitions Completion and Value Creation:

The Effect of Institutional Distance

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CROSS-BORDER MERGERS AND ACQUISITIONS COMPLETION AND VALUE CREATION: THE EFFECT OF INSTITUTIONAL DISTANCE

ABSTRACT

Cross-border M&As have been extensively used to gain access to larger markets, higher economies of scale or scarce assets such as human resources, R&D technologies, or managerial know-how. However, institutional distance causes uncertainty, increases the costs of doing business and requires firms to cope with differences in regulations and culture, which might consequently hinder the acquirers' intention to complete the deal. However, studies regarding the influence of institutional distance on the completion of cross-border M&A deals are rare. Besides, I further hypothesize that institutional distance affects the relationship between paid premiums and value creation. The result suggested that institutional distance has a negative impact on the completion of cross-border M&A deals, and also has a negative moderating effect on the relationship between paid premium and value creation.

***Keywords**:* cross-border mergers and acquisitions, institutional theory, institutional distance, deal completion, paid premiums, value creation.

1. INTRODUCTION

Mergers and acquisitions (M&As) are considered to be a vital part of the global economy (Tamosiuniene and Duksaite, 2009). M&A has been a common business strategy for North American firms. However, this practice became increasingly popular in other regions of the world such as Europe, Asia and Latin America during the fifth mergers wave in the 90s (Hitt and Pisano, 2003). Although the majority of M&A deals involve companies from the same country, there has been a record level of cross-border M&A activities in the last few years. From 9% in 1985, the share of cross-border deals in the total value of global M&As increased to 39% in 2020 (Statista Research Department, 2022). For many firms, cross-border M&As can provide profitable opportunities through larger markets, higher economies of scale or better access to scarce and valuable assets such as human resources, technologies or managerial know-

how (Deloitte, 2017). However, cross-border M&As also face many challenges including institutional differences, difficulty in evaluating foreign firms and cultural discrepancies (Hitt and Pisano, 2003).

The increase in both volume and value of cross-border M&A deals has stimulated an increasing number of theoretical research in the field. Previous studies have expanded our understanding of numerous important aspects of cross-border M&As such as the determinants that affect the likelihood of cross-border M&As, and the impacts of cultural distance or pre-acquisition evaluation on cross-border M&A performance (Erel et al., 2012; Morosini et al., 1998; Ahammad and Glaister, 2013). Another equally vital issue of M&As - whether the announced M&A deals were completed, however, was not received much attention from researchers. Although there is some research on the completion of cross-border M&As, they focused on individual industry sectors or markets (Zhou, Xie and Wang, 2016; Dikova et al., 2009), which might limit the generalization of the results. Therefore, this paper aims to fill in the gap suggested in the extant literature: the impacts of institutional distance on the completion of global cross-border M&A deals. In addition, the paper will examine the moderating effect of institutional distance on the relationship between premium and value creation of cross-border M&A deals.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

A merger and acquisition deal is considered cross-border if it involves two or more firms from different countries (Shimizu et al., 2004). One of the main reasons why firms conduct cross-border M&A is to gain international expansion (Hitt and Pisano, 2003; Shimizu et al, 2004; Tamosiuniene and Duksaite, 2009). Firms generally face multiple entry barriers when entering a new market since they do not have the knowledge of existing local suppliers, distributors and consumers' spending habits. However, M&A deals with local companies allow the acquirers to overcome these challenges. In addition, cross-border M&A also enables firms to access and obtain valuable and unique resources such as new markets, new technology or managerial know-how. Furthermore, once two or more firms are combined, firms might be able to achieve operational synergies such as economies of scale and scope thanks to the spreading

of fixed costs, or financial synergies such as a larger capital allocation, higher cash flow, and tax optimization (Gaughan, 2002; DePamphilis, 2003).

Researchers have evaluated the success of M&A deals based on the financial performance of post-merger or post-acquisition firms (Agrawal et al., 1992; Mantravadi and Reddy, 2008). However, empirical research noticed that 25% of acquisition attempts could not reach the competition stage (Holl and Kyriazis, 1996). Fail to complete an M&A deal can be costly to acquirers as the firms are at risk of losing reputation and credibility, as well as need to pay for contract break penalties (subjects to M&A agreement), consulting and due diligence expenses (Rosenkranz and Weitzel, 2005; Luo, 2005). Although failure to complete an M&A deal has received attention from researchers, most studies have mainly focused on various factors that affect domestic M&A completability such as payment method (Sudarsanam, 1995) or managerial resistance (O'Sullivan and Wong, 1998) but not on institutional distance. Institutional distance refers to "the extent of similarity or dissimilarity between the regulatory, cognitive, and normative institutions of two countries" (Xu and Shenkar, 2002). Institutional distance requires firms to cope with differences in regulations and culture (Li et al., 2016), which might consequently hinder the acquirers' intention to complete the deal (Dikova et al., 2010).

Although some recent studies focus on institutional distance as a factor impacting the completion of M&A deals, they investigate the data of deals from some specific countries or markets (Dikova et al., 2010; Zhou et al., 2016). This paper will, however, discuss how institutional distance affects the possibility of cross-border M&A deal completion using a general sample of deals around the world.

Hypothesis 1: The institutional distance has a negative effect on the completion of cross-border acquisitions.

Premium is the difference between the target's current stock price and the price that the acquirer pays. In an M&A scenario, a premium is paid if the acquirer believes that the deal will create a synergy larger than the combined values of firms participating in the deal, or the cost of merging or acquiring the target firm (Hayes, 2020). Value creation is typically measured by the difference in share prices before and

after the deal is announced (Rehm et al., 2012). Hayward and Hambrick (1997) suggested that premiums not only indicated the acquirers' expectation of the deal's synergies but also affected firms' post-acquisition performance. According to Hitt et al. (2001), a high premium demonstrates the acquirer's confidence in the deal synergies. Antoniou et al. (2007) agreed with this premise and found that paid premium positively correlates to shareholders' short-term cumulative abnormal return. However, the existence of institutional distance causes liability of foreignness (Zaheer, 1995), uncertainty (Akerlof, 1970) and negatively affects the firm performance (Bevan et al., 2004), which, in turn, might hinder both the target stakeholders and the acquirer's confidence in the M&A deal. Therefore, this paper will examine the effect of institutional distance on the relationship between paid premiums and value creation in cross-border acquisitions.

Hypothesis 2: the institutional distance has a negative moderating effect on the relationship between paid premium and value creation in cross-border acquisitions

3. METHODOLOGY

Data collection

Data about global cross-border acquisition deals between 2009 and 2021 is obtained from the Thomson Reuters SDC Platinum database which provides comprehensive information about deal values, deal status, date of announcement and various attributes of the acquirers and targets.

Data reflects the institutional distance obtained from World Bank's Worldwide Governance Indicators. Six aggregate indicators in the dataset are based on 32 different data sources, providing a comprehensive tool to measure the home and target countries' institutional conditions. WGI has been widely used in M&A studies to estimate institutional distance (He and Zhang, 2018; Gaur et al., 2022).

Methodology

There are two dependent variables. The dependent variable for Hypothesis 1 is Completion, a dummy variable that takes the value of 1 if the deal is completed, and 0 otherwise. The dependent variable for Hypothesis 2 is Value Creation, measured by the difference in share prices before and after the deal is announced (Rehm et al., 2012).

For hypothesis 1, the independent variable is institutional distance. With six indicators (dimensions) of a nation's institutions provided by WGI, the institutional distance will be calculated as suggested by Li et al. (2020) and Li et al. (2022):

$$ID_j = \sqrt{\sum_i^6 \frac{(Iij - Iic)2}{Vi}}$$

ID_j is the institutional distance between home country and host country j.

I_{ij} represents the score of host country j in dimension i

I_{ic} denotes the score of home country in dimension i

V_i denotes the variance in dimension i

$ID_j = (I_{ij} - I_{ic})^2 V_i$

For hypothesis 2, the independent variable is *paid premium*, provided in SDC dataset.

Besides, the following variables are control variables, divided into three categories:

- Country-level factors: target country GDP; geographic distance; economic distance
- Firm-level factors: firm acquisition experience; firm size; firm growth rate; firm leverage; firm profitability; industry-related deals (dummy variable using 4-digit SIC code, a value equal 1 if acquiring and target firms are from the same 4-digit SIC classification, 0 otherwise); public status of acquirer (dummy variable, 1 if the firm is publicly owned, 0 otherwise), public status of target (dummy variable, 1 if the firm is publicly owned, 0 otherwise)
- Deal-level factors: advisor (dummy variable, 1 if acquirer hired an international advisor, 0 otherwise), payment type (dummy variable, 1 if payment is in cash, 0 if payment is equity),

ownership stake, deal attitude (dummy variable, 1 if the deal is a friendly deal, 0 if it's unfriendly)

Since the dependent variable of Hypothesis 1 is dichotomous, logistic regression is used to analyze the probability of acquisition being completed.

$$\log\left(\frac{completion}{1-completion}\right) = \beta 0 + \beta 1 * IDj + \sum controls + \varepsilon$$

To investigate the moderating impact of institutional distance on the relationship between paid premium and value creation, the model is constructed as follows:

$$Value\ creation = \beta 0 + \beta 1 * Premium + \beta 2 * IDj + \beta 3 * Premium * IDj + \sum controls + \varepsilon$$

4. CONCLUSION AND IMPLICATION

There are significant managerial implications of this study. Cross-border M&A deals certainly have various advantages, but also costs time and resources due to the uncertainty caused by differences in institutions' regulation, law, and political and economic structures. Understanding the effects of institutional distance on the completability and value creation of M&A deals provides managers a framework to perform M&A deals more effectively and efficiently. However, although the study already considered the industry relatedness, I suggest that future research can examine further if certain industries such as electricity or banks might be more or less sensitive to institutional distance than the others.

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When Work Comes Home: ICTs after Work, Work-life Balance and Job Performance of Chinese Professional Women

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When work comes home: ICTs after work, work-life balance and job performance of Chinese professional women

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Abstract

Information communication technologies (ICTs) have been found to permit staffs to work anytime and anywhere thus blur the boundaries of work and life. Under this tendency, this study draws on boundary theory to examine the consequences of professional women's experiences of ICTs after work (being connected and accessible for job after working hours). A sample of 371 professional women accomplished the survey. The findings reveal that Chinese professional women's ICTs after work was associated to work-life balance negatively but positively to job performance. Although ICT demands after work yields negative work-life balance, this link was weaker when traditionality is higher. This indicates that for Chinese professional women with traditionality, ICTs after work may facilitate work-life compatibility. The findings assist organizations in understanding the impact of the expectation to remain connected to their jobs even when they are away from the office.

Keywords: ICTs after work, work-life balance, job performance, traditionality, professional women

Introduction

Over the past few decades, the advance of ICTs such as ubiquitous Internet access and affordable mobile devices have made many areas of our lives more convenient, while the boundaries between formerly distinct facets of human existence they have also been blurred (Gadeyne et al., 2018). It has been revealed that the constant connectivity usage of ICTs arise inter-role conflict when individuals participate in their work and/or non-work activities (Greenhaus and Beutell, 1985, Derks et al., 2016). Because of the blurring of the boundaries between different living domains, it is more difficult for staffs to disengage and recover from their work after work which is also associated with the rise of mental illness and work-home conflicts (Gadeyne et al., 2018, Duxbury et al., 2014, Boswell and Olson-Buchanan, 2007, Ďuranová and Ohly, 2015) . On the other hand, ICTs provide considerable resources, offering anywhere and anytime availability (Day et al., 2012) and can improve workplace flexibility, productivity and efficiency (Cousins and Robey, 2015, Ninaus et al., 2015). This research contributes to the literature in the following ways. First, this research incorporated boundary theory into the theoretical framework to examine a distinct phenomenon in mainland China. Specifically, this research explores the moderating effects of traditionality (Farh et al., 2007) on the relationship between Chinese professional women's ICTs after work and their work-life balance as well as job performance.

Theoretical background

Boundary theory refers to a framework that transitions from one role to another is an activity cross boundary in which people exit and enter roles by overcoming boundaries (Ashforth et al., 2000). Clark (2000) remedy the gaps left by previous work and family theories by proposing that people cross borders and migrate between the domains of work and family with physical, temporal and psychological borders. Recently, researchers integrate the border theory and boundary theory as work-family boundary/border

theory (boundary theory hereinafter) due to their similar concept (Park et al., 2020b, Xie et al., 2022). Accompanying with the widespread use of ICT in work, professional women are inevitably to the interference of their supervisors or customers even after work, which in turn results in work-life interference and makes professional women feel less control of the boundaries between their personal life as well as professional lives.

Hypothesis development

ICTs and work-life balance

Many recent studies have shown that the usage of ICTs after work is related with work-life conflict, work overload, anxiety and frustration (Fujimoto et al., 2016, Cho et al., 2020, Park et al., 2020a). ICTs is supposed to generate stress for employees because it generates the tensions that employees need to balance their roles of work and non-work in separate domains (Duxbury et al., 2014).

Hypothesis 1. Professional women's ICTs after work is negatively related to their work-life balance.

ICTs and job performance

Technology might assist people in working more flexibly by facilitating shifts between work and family roles (Ashforth et al., 2000). Employees who have received appropriate training in information and communications technology may retrain their ICT skills in order to increase their job performance and more effectively to complete their work demands.

Hypothesis 2. Professional women's ICTs after work is positively related to their job performance.

The moderating role of traditionality

People in traditional Chinese culture are encouraged to see their employment as an essential method of discharging the duties that they have to their families and to strive diligently to enhance their families' economic and social standings (Zhao et al., 2019). Traditional professional women experience less harmful work-life balance outcomes because dealing with ICTs requires more social rules. Low traditionalists, on the other hand, are more prone to take offensive actions seriously. Consequently, we provide the following hypotheses:

Hypothesis 3. Professional women's traditionality moderates the relationship between ICTs after work and work-life balance, such the strength of the relationship is weaker (vs. stronger) for professional women who with higher (vs. lower) traditionality.

Yang developed the concept of Chinese individual traditionality and defined traditionality as a set of characteristics that are generally seen in people in traditional Chinese culture (Yang, 2003). This kind of work ethic enhances the working motivation of individuals, guides the behavior in work, and advocates hard work and dedication, that is to say, the value of hard work is affirmed and advocated (Zhang, 2020, Le et al., 2020).

Hypothesis 4. Professional women's traditionality moderates the relationship between ICTs after work and job performance, such the strength of the relationship is stronger (vs. weaker) for professional women who with higher (vs. lower) traditionality.

Method

Sample and procedure

This research employed online survey the more accessible and widespread process of online data collection (Curran, 2016). A total of 385 questionnaires were returned. A total of 371 valid questionnaires were collected, yielding a response rate of 96.3%. All of the respondents are Chinese women.

Measures

Three of the scales used in this study were originally developed in English. Following procedures of Brislin (1970), the scales were well-established scales in previous research and translated from English to Chinese. All the scales were five-point Likert-type scales. Two English professors served as reviewers and consultants to scrutinize the original and Chinese versions.

ICTs after work. Four-item subscale of ICT demands was used by Park et al. (2020b) who adopted the original scale which was developed and validated by Day et al. (2012). The Cronbach's α was .876 in this study.

Traditionality. This construct was measured from subscale of the Chinese Individual Traditionality Scale (Yang et al., 1989). The Cronbach's α was .893 in this study.

Work-life balance. Work-life balance was measured with the four-item scale developed by Brough et al. (2014). The Cronbach's α was .852 in this study.

Job performance. A five-item scale devised by Williams and Anderson (1991) was used to measure job performance. The Cronbach's α was .896 in this study.

Control variables. An array of control variables include age, marriage status, and average number of hours spent on ICTs after work per day was controlled as these have been found related to work-life balance following prior studies (Carlson, 1999, Choi, 2008).

Results

Preliminary analyses

All of the measures in this research showed good reliability. This research conducted confirmatory factor analysis to assess the discriminant validity of the constructs before testing the hypotheses as shown in Table 1. The analysis compared the hypothesized four-factor model where all items were loaded on their respective latent variable provided good fit (χ^2 = 294.592, df = 129, CFI= .958, RMSEA = .059, NNFI = .950).

Table 1 demonstrates the means, standard deviations, and correlations of the variables. ICTs after work was negatively related to work-life balance but positively related to job performance.

Table 1

Descriptive statistics and correlations

	Mean	SD	1	2	3	4	5	6	7
1. Age	31.63	5.58							

2. Educational Level	2.06	0.45	.27**						
3. Marital Status	1.89	0.37	.24**	-0.01					
4. The number of children	2.02	0.57	.35**	-0.03	.60**				
5. Work-life balance	3.03	0.76	0.01	0.04	0.03	0.03			
6. ICTs after work	3.72	0.93	-0.04	-0.01	-0.03	-0.06	-.54**		
7. Traditionality	3.70	0.85	-0.06	-0.03	-0.05	-0.02	-.29**	.40**	
8. Job performance	3.91	0.79	-0.02	-0.03	-0.04	-0.04	-.31**	.36**	.39**

$N = 371$

** Correlation is significant at the 0.01 level (2-tailed).

Hypotheses testing

After controlling age, educational level, marital status and number of children, ICTs after work was negatively correlated with work-life balance. As revealed in Table 2, ICTs is negatively related to work-life balance (B = -0.44, p = < 0.001). The results supported hypothesis 1.

Table 2

Regression results

	Model 1				Model 2				N	
	B□	S.E.	*t*	*p*	*B*□	S.E.	*t*	*p*	*B*□	S.E.
Age	0.00	0.01	-0.51	0.61	0.00	0.01	-0.58	0.56	0.00	0.01
Educational level	0.07	0.08	0.86	0.39	0.07	0.08	0.84	0.40	0.08	0.08
Marital status	0.05	0.11	0.45	0.66	0.04	0.11	0.36	0.72	0.00	0.11
Number of children	-0.01	0.08	-0.09	0.93	0.00	0.08	-0.02	0.99	0.00	0.07
ICTs after work	-0.44	0.04	-12.32	< 0.001***	-0.42	0.04	-10.65	< 0.001***	-0.39	0.04
Traditionality					-0.07	0.04	-1.71	0.09	-0.07	0.04
ICTs after work*Traditionality									0.18	0.03
R^2			0.30				0.30			
$\triangle R^2$			0.30				0.01			
Dependent Variable: Work-life balance										

* p<0.05 ** p<0.01 *** p<0.001

Table 3

Regression results

	Model 1				Model 2					
	B□	S.E.	*t*	*p*	B□	S.E.	*t*	*p*	B□	S.E.
Age	0.00	0.01	0.23	0.82	0.00	0.01	0.48	0.64	0.00	0.01
Educational level	-0.05	0.09	-0.59	0.56	-0.05	0.09	-0.54	0.59	-0.04	0.09
Marital status	-0.05	0.13	-0.36	0.72	-0.01	0.12	-0.09	0.93	-0.03	0.12
Number of children	-0.02	0.09	-0.24	0.81	-0.04	0.09	-0.49	0.63	-0.04	0.08
ICTs after work	0.31	0.04	7.36	< 0.001***	0.21	0.04	4.76	< 0.001***	0.22	0.04
Traditionality					0.27	0.05	5.70	< 0.001***	0.27	0.05
ICTs after work*Traditionality									0.09	0.04
R ²			0.13				0.20			
△R ²			0.13				0.07			
Dependent Variable: Job performance										

* p<0.05 ** p<0.01 *** p<0.001

As shown in Table 3, ICTs was positively related to job performance (B = 0.31, p = < 0.001) which means that there is a significant positive relationship between ICTs after work and job performance. The results supported hypothesis 2.

As can be seen from Table 2, the interaction between ICTs after work and traditionality shows significance (t = 5.15, p = <0.001). Simple slope tests showed the relationship between ICTs after work and work-life balance was significantly positive (*Coef.* = -0.24, p < 0.001, 95% *CI* = [-0.34, -0.14]) when traditionality was high, as well as significant (*Coef.* = -0.54, p < 0.001, 95% *CI* = [-0.63, -0.45]) when traditionality was low. Thus, hypothesis 3 was supported.

Simple slope tests showed the relationship between ICTs after work and job performance was positive and significant (*Coef.* = 0.30, p < 0.001, 95% *CI* = [0.19, 0.42]) when traditionality was high, as well as significant (*Coef.* = 0.14, p < 0.01, 95% *CI* = [0.04, 0.24]) when traditionality was low. Thus, hypothesis 4 was supported.

Discussion

This study found that work-related ICTs after work was negatively associated with work-life balance. The findings in line with most studies on work-related information and technology use during non-work hours (Gadeyne et al., 2018, Cho et al., 2020, Boswell and Olson-Buchanan, 2007) . ICTs after work indeed be impactful for professional women's work-life balance as they call for a heightened degree of attention and concentration on the part of the reader (Gadeyne et al., 2018). Furthermore, this study confirmed that work-related ICTs after work was positively related with job performance with previous research (Diaz et al., 2012).

Theoretical Implications

The results of this study make theoretical contributions in several ways. First, this study confirms with prior studies about the negative relationship between ICTs and work-life balance (Gadeyne et al., 2018, Boswell and Olson-Buchanan, 2007). Additionally, this study confirms with prior studies about the positive relationship between ICTs and job performance (Day et al., 2012). Second, this research extends the literature with the finding that traditionality moderates the negative relationship between ICTs after work and work-life balance. In line with Farh et al. (2007), the results showed that moderator of traditionality was associated with work-life balance when the employee has different level of traditionality. Third, this study supported the boundary theory, which states that people in the work domain might impose more or less work expectations that pervade the home border of professional women (Clark, 2000, Kreiner et al., 2009).

Practical Implications

The increasing pressure of social achievements and family responsibilities doubled the burden of working women and their role conflict with the rapid development of China (Wang and Peng, 2017). For female employees, they can enhance job performance by the acquisition of ICT skills and efficiency. On the other hand, organizations could pride more flexible organizational norms, arrangements, practices such as telecommuting, flextime to enhance professional women's work-life balance as well as their job performance (Fujimoto et al., 2016). Maintaining the boundary between life and work is remains crucial

as ever. Furthermore, family policies should be proposed by nation to interfere with the management of the private sector and provide more effective incentives for professional women (Vyas et al., 2016).

Limitations

This study has a number of limitations. First, the findings are based on cross-sectional data that cannot be used to articulate causal effects. Second, this paper examined the role of traditionality which originates from societal mechanisms and rooted in Confucianism (Farh et al., 2007). Third, in line with most studies in this field, ICTs after work was self-assessed.

Conclusion

This study continues on the tendency that coping with ICT demands is becoming an increasingly significant issue for employees (Park et al., 2020b). The empirical findings conclude that boundary theory was applicable to predict job performance involving ICTs as well as identify traditionality as moderation which can buffer the negative effects of ICTs on work-life balance. Future research can build upon the theoretical contribution to advance boundary theory as well as improve the quality of professional women's lives.

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Exploring the Influencing Factors on Foreign Students' Learning Performance

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Exploring the influencing factors on Foreign Students' Learning Performance

Abstract

This research examines the influencing factors on foreign students' learning performance in Taiwan. The questionnaire survey was conducted in four universities with 592 valid respondents from different majors and nationalities.

The results show that motivation, basic communication competencies (in terms of listening and speaking), emotional intelligence (in terms of regulation of emotion, and well – being), reflective thinking, and cultural intelligence (in terms of metacognitive CQ, and motivational CQ) have significant influences on foreign students' learning performance. Furthermore, situational factors (in terms of facilities) play a moderating role on influencing the relationship between motivation and learning performance, and influencing the relationship between basic communication competencies and learning performance.

Keywords: learning performance, motivation, basic competencies

1. Introduction

Current academic business is facing internationalization challenge. Many universities offer international programs available for foreign students (Healey, 2008) to study.

The number of foreign students in Taiwanese universities, and colleges have increased from 58 thousand in 2011, 80 thousand in 2013, 111 thousand in 2015, 121 thousand in 2017, and 128 thousand in 2019. The number of foreign students decreased in 2020 and 2021 due to Covid-19 impact. There were 98 thousand foreign students in 2020. Many students are mainly from Vietnam, Indonesia, Malaysia, Hong Kong, and Japan.

Wang & Chang (2016) have discovered foreign students' motivations are studying Chinese language, exploring Taiwanese culture, and having a better chance of obtaining a job in Taiwan after graduation. Academic, cultural, economic factors are relevant motivations (Ma, 2014). Chang (2017) also thinks motivations of foreign students (Chang, 2017) to study in Taiwan are: closer geographical distance from their home country, a better standard of living, good education system, job opportunities after graduation, learning Chinese language, and lower-cost consumption.

Tsay & Sirinat (2013) have particularly found Thai students facing many difficulties and adapting problems in Taiwan. Pare & Tsay (2014) also discover three challenges for foreign students including cultural, learning, and interpersonal adaptation.

Language ability is the critical factor affecting foreign students' learning performance (Pham et al., 2017). Social-cultural adjustment, English proficiency, study motivation, loneliness and homesickness, and financial pressure influence foreign students' academic performance (Thanh, 2018). From above literature,

influencing factors such as motivation, financial situations, language communication skills, and cultural factors should be considered while concerning foreign students' learning performance.

Cognitive, emotional, environmental factors, and previous experience have significant influences on students' understanding a world perspective, knowledge, and skills gained or altered (Illeris, 2004; Ormrod, 2012) according to Learning theory. Learning theory includes behaviorist, cognitive, constructivists, transformative, geographic, and multiple intelligence theories. In Behaviorist viewpoint, learner concerns about studying condition, and supporting system. Cognitive approach pays extra attention on learners because of the complexity of human memory. Constructivists think that knowledge acquisition of learners should be a personalized process of creation. Transformative approach focuses on the often-required shift in a learner's preconceptions and worldview. Geographic approach concentrates on how settings and environments influence the learning process. Multiple intelligences theory regards that learning is viewed as the interaction between many various functional sites in the brain (Willingham et al., 2015).

Motivation, scholarship, language proficiency, sociability skills, and full-time attendance substantially impact academic success of overseas students (Simmons et al., 2005). Culture shock, different communication, social isolation, cross-cultural relationships, financial challenges, anxiety, and stress may have significant influence on their academic achievement (Wang & Frank, 2002). Foreign students may face academic challenges such as courses, teaching, evaluation methods, academic systems, communication (Joo et al., 2011; Ko & Chung, 2014; Tamaoka et al., 2003), culture (Lee, 2014; Wang, 2004), and financial problem (Banjong, 2015; Lee, 2017). However, communication, cultural challenges, and financial situations should be considered while concerning foreign students learning performance.

Cross-cultural problems have significant influences on foreign students' academic achievement (Li et al., 2010). Cultural intelligence may improve a person's capacity to adapt and perform successfully in various and unexpected situations (Ang et al., 2007). There is an opportunity to study cultural intelligence's influences on foreign students' learning performance.

Reflection ability is very important for absorbing new knowledge. Reflective thinking allows students to learn knowledge in which students can use their own experiences, share information, and apply it in new situations (Güneş, 2012). According to Strampel & Oliver (2007), developing students' reflective thinking skills can help students to learn more, enable their conceptual transformation, and foster their critical evaluation and knowledge transfer. Reflection ability is increasingly recognized as a necessary component for learners. However, there is an opportunity to study reflective thinking influences on foreign students' learning performance.

School hardware and software resources' availability, relevance, and suitability affect students' learning performances. Class size, connection between lecturers and peers, curriculums, evaluation and feedback, quality of lectures, and university environment are relevant factors that may influence students' learning

(Bautista, 2016; Carragher & McGaughey, 2016; Diniz et al., 2016; Kane et al., 2014). Facilities are the most crucial factors on improving academic learning, such as school buildings, classrooms, laboratories, libraries, and recreational equipment (Alimi et al., 2012). Positive correlations between school facilities and students' achievement are indicated in the past researches (Adeboyeje, 1984; Adedeji, 1998; Ajayi, 2002; Owoeye, 2000). Student performance is influenced by proper guidance and learning facilities (Mushtaq & Khan, 2012). There is a positive correlation between school quality and student academic satisfaction (Ko & Chung, 2014). Therefore, school facilities and supporting program should be considered their moderate influences while concerning foreign students learning performance.

Emotional intelligence has significant influences on working achievement (Asrar-ul-Haq et al., 2017; Mehmood et al., 2013; Zahid et al., 2008). Emotional intelligence is a key ability that are found as a predictor of success in job, academics, and personal-social interactions (Brackett et al., 2011; World Economic Forum, 2016; Zeidner et al., 2009). Emotional intelligence is used to predict academic performance (Billings et al., 2014; Costa & Faria, 2015; Parker et al., 2004; Reyes et al., 2012). Therefore, emotional intelligence (EQ) should be considered while concerning foreign students' learning performance.

Monitoring, evaluating, and assessing students' academic performance are the most challenging issues (Tahir & Naqvi, 2006). Academic performance is one of the main concerns for organizations when hiring new employees. Academic achievement and early job success have certain connections (Kool et al., 2016; Hu & Woliniak, 2013).

The main purpose of this study is to understand the relevant factors' influences on foreign students' learning performance in Taiwan. From past literature, some essential variables including motivation, basic communication competencies, emotional intelligence, reflective thinking, cultural intelligence which are endogenous factors that have significant influences on foreign students' learning performance. Foreign students should have basic competences including communication competencies, emotional intelligence, reflective thinking, and cultural intelligence to help them perform well in foreign environment. School facilities and supports are exogenous factors and can be regarded as situational factors, which are considered as moderators in influencing foreign students' learning performance. Therefore, this research focuses on the influences of variables including motivation, basic competences (including communication competencies, reflective thinking, emotional intelligence, and cultural intelligence), and situational factors on foreign students' learning performance. The research questions are listed below:

1. What are the influences of variables such as motivation, and basic competences (including communication competencies, reflective thinking, emotional intelligence, and cultural intelligence) on foreign students' learning performance?
2. What are the influences of moderating variables such as situational factors (including school facilities and supports) on the relationship between motivation and students' learning

performance, and on the relationship between basic competencies and students' learning performance?

It is very important on identifying important factors in influencing foreign students' learning performance which can help governments and universities to develop a better strategy and program to support their foreign students. This research hopes to provide useful and practical information for scholars, researchers, and students who are interested in Taiwanese education system.

2. LITERATURE REVIEW

This section examines the relationship between motivation, basic competencies (including communication competencies, emotional intelligence, reflective thinking, and cultural intelligence), situational factors, and learning performance based on previous literature reviews.

2.1. Motivation

Moving to a new nation is a serious life decision for anyone. Motivational variables are considered as major determinants of migration and social adaption processes (Berry, 1997; Kim, 2001; Rumbaut, 1991; Scott & Scott, 1989; Ward et al., 2001). Economists, sociologists, and psychologists all take diverse approaches to people's motivations for going abroad. Economists look at international immigration from the perspective of the international firm and labor demands in different nations (Massey, 1999). Psychologists usually try to figure out why people want to relocate to another nation on a personal level (Winchie & Carment, 1988). Sociologists have identified a systemic, governmental, and socioeconomic variables that encourage people to stay in other countries (Richmond, 1993). Tartakovsky & Schwartz (2001) discover three motivations: "preservation" which is related to health, social, and psychological safety; "personal-development" which belongs to self-improvement, awareness, and abilities development; and "materialism" which represents the wish for financial development and wealth. Student motivation is an internal condition that includes drives, and maintaining learning-related activities (Hakan & Munire, 2014). There are a lot of definitions about motivation. The motivation is intrinsic aspirations that are already existent in person or which is reflected in a person while obtaining knowledge and learning (Lin, 2012). Motivation is something that stays in people's mind all the time, keeps people going, and helps people set goals (Dornyei, 2001). Motivation is a state in which an individual actively expresses a variety of attitudes in order to attain a specific purpose (Baumeister & Vohs,2007).

The definition of motivation in this study is foreign students' consistency in putting their effort into their studies, overcoming the challenge to improve their personal ability, and achieving their goals in the future. Students learning motivation is their need, desire, willingness, and commitment to aspire the learning process (Bomia et al., 1997). Learning motivation is the tendency of students to engage in learning activities

that are motivated by a desire to acquire the best possible learning outcomes or results. Learning motivation is a desire to maximize one's own talents in order to perform better, excellent, and creative (Nashar., 2004). According to Lepper (1988), there are two kinds of motivation. Intrinsically motivated students engage in activities for the purpose of satisfaction, learning, or the feeling of accomplishment. On the other hand, extrinsically motivated students perform and seek to succeed in acquiring some rewards or avoiding some external punishment to the actions such as grade or teacher recognition.

Motivation is seen as a critical aspect that influences people attitude and achievement (Kian et al., 2014; Turan, 2015). The motivation of learning activities allows students to focus on what they are doing to gain satisfaction. For foreign students, their motivation is the desire of hopes or opportunities that their host country would provide a superior educational environment and create chances after their graduation. Motivation is important for learning success (Chickering & Kuh, 2005) because motivation is the key to long-term learning and persistence.

According to Bosman (2012), educationalists and psychologists examine motivation in connection to academic success for many years. Motivation is a major contributor to academic success. The fundamental concept of motivation and academic achievement are connected, and the academic outcome is assumed to result from motivation (Mnyandu, 2001). Motivation is one of the essential criteria which helps foreign students to have more motivation to achieve their academic achievement (Barrie, 2007). Performance and academic motivation have a significant positive connection (Krishnamurthy, 2000). Vansteenkiste et al. (2005) find that student motivation has a favorable impact on overseas students' academic achievement. The essential of motivation as one of components to improve students' learning achievements has been highlighted (Karaguven, 2012; Kaya, 2013; Wolters & Rosenthal, 2000).

In this study, five motivation indicators abstracted from Chirkov et al. (2007) are applied to measure motivation effect on foreign students' learning performance. Studying in a different country is a meaningful, exciting, and challenging experience. To study overseas is involved in self–determination process which can be regarded as intrinsic motivation. Most foreign students study abroad that they want to have better education, job opportunities, learning languages, and having a better life or value. Based on the above literature, the research hypothesis is:

H1: Motivation has a significant influence on foreign students' learning performance

2.2. Basic Competencies

Basic competencies include communication competencies, emotional intelligence, reflective thinking, and cultural intelligence which are individual's relevant abilities in learning. These variables can be found a lot of discussions available in Cognitive theory of Learning.

According to Cognitive theory, parts of a person's knowledge acquisition can directly link to observe other people in the way of people communication, experiences, and outside media influences (Bandura, 1977). This idea is regarded as an extension of social learning theory. Observing a model might also encourage the observer to repeat a previous taught behavior. The formation and maintenance of emotional and behavioral responses to life situations are heavily influenced by an individual's cognition (González-Prendes & Resko, 2011).

2.2.1. Communication Competencies (CC)

The term communication competence is made up by two words, "communication" and "competency" which mean one's ability to communicate. Morreale et al., (2000) have claimed that individuals with weak communication abilities are often perceived as less attractive by their peers and have fewer friendships.

The capability of person to deal with interpersonal interactions in communication situations is referred as interpersonal communication competence (Rubin & Martin, 1994). Hymes (1972) describes that communicative competence requires precise knowledge of a language's structure. Good ability of communicative competence would encourage students to use it in everyday communication. There are many different definitions from previous literature. Communication competencies are a synthesis of basic grammatical principles, understanding how language is employed in social circumstances to execute communication functions, and understanding how expressions and communicative functions can be integrated according to the principle of conversation (Canale & Swain, 1980). Communication is the ability to display a deep understanding of socially suitable communicative behavior in the given circumstance (Gumperz, 1976). Communication ability of an individual is to display knowledge of the proper communication behavior in the given context (Larson et al., 1978). Communication ability to set realistic and suitable goals, and to maximize their achievement by generating adaptive communication performance (Phillips, 2000).

In this study, communication competencies are defined as foreign students' abilities in listening, reading, speaking, writing, and expressive skills to understand, responding, interacting with other people, and completing their school assignments in an academic environment.

According to Goldfinch & Hughes (2007), lack of confidence in communication skills leads to low performance. Student communication competence has a relationship with communication apprehension and learning performance (Rubin et al., 1990). The essential of communication competencies in a diversity of field experience are involved in university success, persistence, emotions, life happiness, and upcoming careers (Ghorbanshiroudi et al., 2011; Morreale et al., 2000; Rubin et al., 1990; Wei et al., 2005).

Communication competency includes presentation skills, group discussion, public speaking, and how to interact with other people. Communication ability not only plays an important role in exchanging ideas or

information between individuals, but also in impacting their satisfaction and learning outcomes. Therefore, this research hypothesis is:

H2: Communication competencies have a significant influence on foreign students' learning performance.

Spitzberg (1997) investigates the ideas of communication competence in an intercultural context and develops lists of abilities, talents, and behaviors on intercultural competence (such as understand, verbal/ nonverbal actions, social adaptability, interaction engagement, etc.). According to Rubin (1994), communication competence includes self-reveal, social comfortable, conversation management, altercentrism, expressiveness, supportiveness, empathy, immediacy, and environment control. Communication competency is a set of abilities to communicate messages, listen to others, and provide feedback (Hoy & Miskel, 2010).

Communicative competence has four distinct factors interacting and influencing each other in term of grammar ability, sociolinguistic competence, discourse skills, and strategic capability (Brown, 2007; Canale & Swain, 1980). Listening skill is one of the essential parts in successful interpersonal communication (Bodie, 2011; Cupach & Spitzberg, 1981; Du et al., 2011; Haas & Arnold, 1995). Listening abilities are stated to have significant influences on communication competences (Roberts & Vinson, 1998).

A person with good communication skills should be able to speak with others in an expressive way. Veletsianos (2009) emphasizes the importance of expressiveness in improving communication and encouraging interactions. Expressiveness is important for both teachers and students when they communicate with each other. Above literature has indicated the importance of speaking and listening. Therefore, this study has the following hypothesis.

H2a: Speaking and listening have a significant influence on foreign students' learning performance.

Writing and reading are all essential components of communicative competence, which highlights learners' communication expertise. According to Opara (1999), communication competence states with the human ability to grasp and employ words suited to various settings. This indicates the importance of oral and written communication fluency. The most common causes of poor academic are reading issues (Carmine et al., 1997). Runo (2010) finds that students performing badly on the phrase and reading comprehension in school are also with low academic performance. Those who have difficulty in reading English will have challenges on their achievement (Chege, 1999; Kirigia, 1991; Njoroge, 2000).

According to Okoh (1998), speech and writing are the primary forms of expression for academic purposes. Writing is a principally visual phenomenon that is a system of graphic symbols and the reader must translate. Above literature indicates the importance of reading and writing abilities for students. Therefore, the research hypothesis is:

H2b: Reading and writing have a significant influence on foreign students' learning performance.

This study adopts eight indicators of communication competencies built by Rubin & Martin (1994) because it is a simple evaluation method, and it is easy to identify difficulties associated with students' interpersonal communication competency. These indicators include listening, reading, speaking/ expressive, and writing skills, which are very important for foreign students to communicate with classmates and teachers, and to complete their assignments.

2.2.2. Emotional Intelligence (EQ)

Emotional intelligence is more widely recognized as a measure of overall performance across many areas (Joshi et al., 2012). Goleman (1995) states that "emotional intelligence is power, and even more powerful than IQ". IQ has accounted for 20% of the characteristics that has influenced an individual's success, leaving 80% to other factors, the majority of that are emotional intelligence (Goleman, 2009). Emotional intelligence is required because it is a fundamental component of an individual's scientific and practical life (Abu Rayyash et al., 2006; Gardner, 1983; Khawaldeh, 2004; Mayer & Salovey, 1990; Vincent, 2003). According to Wong & Law (2002), emotional intelligence involves skills, judgment, a manifestation of one's own and others' feelings, and how to use the feelings and emotional intelligence. Hafiz (2011) thinks emotional intelligence implies the skills to comprehend and control people, as well as the ability to act effectively in interpersonal interactions. Ghaonta & Kumar (2014) think emotional intelligence is a concept that describes a person's capacity to manage impulses, and to demonstrate empathy and strength in the face of difficulty while being resilient and flexible.

In this study, emotional intelligence is described as a person's power to assess one's own and other's feelings, to precisely express and control one's feelings, and finally to apply and drive thoughts and activities which is similar as the definition of Mayer et al. (2000).

Emotional intelligence has emerged as a key predictor of academic achievement (Fernandez et al., 2012). High emotionally intelligent students perform better in both assessments and final examinations (Chew et al., 2013). EQ is ability to comprehend thoughts, to access and to develop thoughts, to manage feelings, to actively control emotions, and enthusiastic learning to improve academic growth (Mayer & Salovey, 1997). Emotional intelligence influences academic and professional achievement (Romanelli et al., 2006).

Rode et al., (2007) find students with strong emotional intelligence would have better academic performance. Roy et al., (2013) find emotional intelligence is related to academic success. Individuals show a better emotional intelligence with two domains: self-emotion appraisal and understanding emotional intelligence, that are significantly and positively related to academic achievement (Maizatul et al., 2013).

Emotional intelligence can be regarded as one of the most fundamental components of people's personality, and plays an essential part in determining an individual's behavior performance. Its primary focus is on emotion recognition and monitoring, interpersonal interactions, academic achievement, and study adaption. Therefore, this research has the following hypothesis.

H3: Emotional intelligence has a positive relationship with foreign students' learning performance.

According to Goleman (1995), there are five segments of emotional intelligence, such as self-awareness, self-regulation, internal motivation, empathy, and social skills. Salovey & Mayer (1990) separate emotional intelligence components into four categories including emotional self–appraisal, emotional appraisal of others, regulating emotion, and using emotion to enhance performance. Self-evaluation and expression of emotion are called self-emotional appraisal (SEA). It is known as a person's power to recognize as well as to express their inner feeling in a natural way. People who have a highly developed emotional self-appraisal will be able to comprehend their feelings more deeply than those who do not. Recognition and appraisal of other's emotion are other's emotional appraisal (OEA). It is an individual's capability to observe and comprehend the feelings of everyone around them. Those who have a deep understanding of other people's thoughts and emotions will have a higher emotion appraisal of others. Controlling one's own emotions is regulation of emotion (ROE). This refers to individual's power to control his/her own feelings, which will allow him/her to heal from struggles or stress more quickly. The ability of individuals to manage their own feelings can tolerate psychological pressure and is regarded as emotion regulation. Using emotion to help with the performance is use of emotion (UOE). This refers to people's capacity to channel their emotions into productive activities and to improve personal performance. Individuals who can apply emotion to complete tasks, hence boosting personal performance, are regarded as good at using emotion.

Many researchers use these dimensions of EQ to measure performance, particularly in business context. In the research between EQ and job performance, Noorazzila & Ramlee (2013) state that EQ has positive influence on job performance. Two dimensions of EQ which are regulation of emotion (ROE) and use of emotion (UOE) have positive influence on working performance. There is no correlation between SEA, OEA and job performance, but UOE and ROE have positive impact on job performance (Greenidge et al., 2014). The correlations between ROE, UOE and working performance have been emphasized. Therefore, it's possible to examine the relationship between UOE and ROE with foreign students' learning performance. Hence, the research hypotheses are:

H3a: Use of emotion (UOE) has a significant influence on foreign students' learning performance.

H3b: Regulation of emotion (ROE) has a significant influence on foreign students' learning performance.

According to Petrides & Furnham (2006), there are four components of emotional intelligence: well–being, self–control, emotional, and sociability. A strong well-being score implies a positive outlook on life. Individuals that score high on this aspect are often happy and pleased in their lives. On the other hand, low scores indicate that people have low self-esteem and dissatisfy with their current lives. The level of control over one's needs and wants is referred as the self-control factor. People who score high in self-control can handle and control environmental stresses. People with a low mark are with uncontrollable regulated stress. People with a high emotionality score have a wide range of emotion-related abilities including internal emotion recognition, emotion perception, and emotion expression. On the other hand, people with lower emotionality have trouble detecting and communicating their own emotions. As a result, these people have fewer fulfilling interpersonal connections. The sociability factor indicates one's social connections and impacts. It is considered in social circumstances, not just personal interactions. Self-control emotion is the same as UOE and ROE. However, above literature indicates the importance of well-being. So, the research has the following hypothesis:

H3c: Well-being (WB) has a significant influence on foreign students' learning performance.

In this study, indicators of the use of emotion (UOE), regulation of emotion (ROE), and well-being are abstracted from Petrides & Furnham (2006). When students can assess others' emotions and regulate their own emotions, they will have a high level of confidence which can influence them to take realistic actions and result in good performance (Naseer et al., 2011). These indicators focus on how students control their emotions to overcome challenges and to achieve performance, and focus on how students feel about their life and study in international environments.

2.2.3. Reflective Thinking (RT)

Reflection thinking is an important life skill and has associated with critical thinking (Akerson et al., 2018; Al-Husban, 2020; Murphy, 2014; Naber & Wyatt, 2014; Perdana et al., 2019; YuekMing & Manaf, 2014). Reflective thinking defined by Dewey (1993) is a specific style of thinking that develops from a situation of doubt, uncertainty, or challenge that the students have encountered in their study. Learners try to think in purpose during their learning activities process. The thinking process help them to improve their mindset, behaviors, awareness, flexibility, effective use of information, learning methods, study achievement, and cognitive development (Ertmer & Newby, 1996; Paris & Winograd, 1990; Swartz & Perkins, 1990). Many experts explore reflective thinking from various approaches and views in learning, including theories of experiential education (Boud et al., 1985; Kolb, 1984), expert learning and development (Schön, 1983), metacognitive and self-regulated learning, as well as educational psychologists (Brown, 1987; Flavell, 1987; Zimmerman, 2002). Reflection is applied in a variety of academic and professional contexts, and the benefit

of reflection including teaching, nursing, medical, technology, and sciences (Ashby, 2006; Chretien et al., 2012; Cunningham & Moore, 2014; Ferreira et al., 2013; Kori et al., 2014).

According to Lai & Viering (2012), reflection helps students to build a greater comprehension of what they are learning by making new connections and linking diverse viewpoints. Students become proficient at recognizing that they are always learning and growing skills as a result of reflection (Helyer, 2015). Reflection states as an essential and powerful element for learning which helps students' self-reflection, critical thinking, and development of professional ideals and skills (Layl, 2011). Reflection thinking is defined as the capability to apply observation and knowledge to influence decisions what has happened in the past or is happening now to lead and control future activities (Pisapia, 2009). Reflection is defined as an essential human action where humans recall their knowledge, re-think about it, mull it over, and evaluate it (Lew & Schmidt, 2011). Strampel & Oliver (2007) regard reflective thinking as methods of thinking and reflecting on how to act for different understanding.

For this research, the definition of reflective thinking is the way of monitoring, analyzing, and evaluating of individuals knowledge in order to achieve educational objectives, maintain motivation, gain strong understanding, employ effective learning methods, and communicate with classmate and teachers to build new learning perceptions that effectively enhance learning processes and achievement.

The reflection level is that a student has correct comprehension reflection and can connect it to personal experiences or apply it in practical ways (Kember et al., 2008). Reflection requires active, continuing, and careful views of any assumptions or beliefs of one's situation. In this stage, people are aware of what they already know and what they still need to learn (Asakereh & Yousofi, 2018). The greatest level of reflective thinking and the critical reflection level involve a transformation in people’s viewpoints on earlier beliefs about their understanding. Critical thinking provides useful hindsight to avoid misinterpreting and bias information bases on prior beliefs and opinions (Norris & Ennis, 1989; West et al., 2008).

This study abstracts four indicators of reflective thinking from Kember et al. (2000) because learners can improve their ability through linking new information with their past beliefs, analyzing that information in logical ways, using different techniques in new assignments, and understanding their individual thoughts and ideas.

Reflective thinking allows students to develop a comprehensive grasp of a topic by expressing and monitoring what they have learned, as well as to improve their metacognitive skills by examining if the cognitive process skills they applied are effective (Schraw, 1998; Walters et al., 1994). Students can change bad experiences that have related to their beliefs or desire into good learning experiences by reflecting on their educational experience (Boud et al., 1985; Boyd & Fales, 1983; Moon, 1999). Through deriving conclusions or meaning from what they have learned before, students' reflection actions might cause a change in how they react with their learning in the future (Dunlap, 2002; Lin et al., 1999; Moon, 1999).

Reflective thinking influences academic and professional achievement (Phan, 2008). Reflective thinking is how integrating the information obtained into one's previous understanding to make a better decision in the future as well as to improve one's performance (Rogers, 2001).

Ash et al., (2005) find out that reflection exercises could help students to improve their academic achievement. Şahan & Kalkay (2014) find the growth of reflective thinking ability is critical for students' academic success as well as their personal development. McCormick et al., (2013) find students who are carefully taught metacognitive tasks, like written self-reflection, will be more highly involved in their school assignments and have outstanding academic success.

Reflective thinking skill towards problem-solving has influence on academic performance (Aydın, 2015). Kori et al. (2014) discover that developing reflective skills are linked to improving performance, which means if people improve their ability, the reflection will have a positive impact on their academic abilities. There are significantly improved scores and learning performance in the assigned learning tasks while students go through the reflective thinking process, and their awareness of learning strategies may be improved at the same time (Ersozlu & Arslan, 2009). Reflection allows students to integrate new learning into their previous knowledge and skills, and encourages them to engage with their experiences and performing well. Therefore, the research has the following hypothesis:

H4: Reflective thinking has a significant influence on foreign students' learning performance.

2.2.4. Cultural Intelligence (CQ)

The concept of a greater understanding of culture is strongly related to what is known as "cultural intelligence or CQ". Cultural intelligence deals with many things, like human action, communication, and gestures. CQ becomes increasingly significant in assisting people in understanding various cultures (Earley & Mosakowski, 2011). Some researchers find that people who go to other countries for their careers or studies have a better of CQ than people who go abroad for other reasons (Crowne, 2008; Pless et al., 2011). CQ is an individual's ability to function and work effectively in culturally different environments or to understand the reason appropriately in solving problems. According to Earley & Ang (2003); Heppner et al., (2017), cultural intelligence is defined as individual's ability to function and manage effectively in a variety of cultural settings. CQ is a set of skills and knowledge connected by cultural metacognition that helps human to adapt, choose, and modify the cultural components of their surroundings (Thomas et al., 2008). CQ is a type of intelligence that concentrates on grasping, reasoning, and conducting effectively in different cultural circumstances (Schmidt & Hunter, 2000).

For this research, cultural intelligence is defined as students' abilities that focus on a particular cultural situation, how they manage and adapt in a different cultural environment which is similar as the definition of Earley & Ang (2003), and Heppner et al., (2017).

According to Thomas (2006), CQ has three dimensions in terms of mindfulness (later renames to metacognition), cognitive, and behavior. Earley & Ang (2003) add a fourth motivational dimensions. People have good score on all parts of CQ and have a strong willingness to use their cultural knowledge to develop a strategy which helps them to demonstrate accurately verbal and nonverbal actions (Lin et al., 2012).

Metacognitive CQ refers to an individual's cultural awareness and knowledge of distinctions throughout communication. Generally, individuals with metacognitive CQ will analyze assumptions about their cultural knowledge because they know about the cultural gaps and try to deal with them in different cultural situations (Bucker et al., 2015). High-order mental skills are to consider one's own thinking processes, to assess others' cultural information, and to modify mental models throughout international cultural situations (Konanahalli et al., 2014). Metacognitive CQ is concerned with the higher-order cognitive processes that people use to establish and absorb cultural information (Eisenberg et al., 2013). In conclusion, people with metacognitive CQ look answers from the person they are communicating with unexpected emotions or behaviors.

Cognitive CQ encourages people to think about different cultures and to look for explanatory models to explain cultural differences. This component is focused on specific knowledge of different cultures' values, norms, and practices, as well as knowledge of different cultures' social, economic, and legal systems (Earley & Ang, 2003). People who have better cognitive CQ can analyze and comprehend similarities and contrasts in a variety of cultural contexts (Eisenberg et al., 2013).

Motivational CQ in culturally new or diverse contexts represents a people's ability to start, maintain, and sustain learning other valuable activities (Eisenberg et al., 2013). It includes extrinsic motivation such as tangible benefits that have received from cultural interactions and self-efficacy, and intrinsic motivation such as the degree to which one prefers cultural interactions (Van Dyne et al., 2012). Its capability is to make a concentration effort to learn and adapt to circumstances in cultural differences (Earley & Ang, 2003). Motivational CQ contributes to improving self-efficiency. People with high motivational CQ have strong energy to build trust and control over unfamiliar situation.

Behavioral CQ is when engaging with people from other cultures. This part displays a person's capacity to use acceptable verbal and nonverbal styles that allows them to take active interaction. Behavioral CQ enables a person to appreciate a wide range of experiences in order to create quickly and precisely, and to have situational sensitive responses to emerging problem (Lovvorn & Chen, 2011).

This study applies metacognitive CQ and motivational CQ from van Dyne et al. (2008). Although the goal of courses at different universities may change to some points, study abroad can improve students' learning, interpersonal skills, self-development, and can assist students gaining a greater awareness of other cultures and global business processes (Ingraham & Peterson, 2004; Orahood et al., 2004). Furthermore, experience in various cultures can increase students' curiosity about other cultures, influences on their desire to learn

more about themself and their motivation for studying abroad, and the possibility to get potential job in the future (Norris & Gillespie, 2008).

Many researches indicate the relationship between cultural intelligence with important outcomes, such as problem-solving (Engle et al., 2013), the outcome of negotiations (Groves et al., 2014), efficiency (Peng et al., 2014), innovative cooperation (Chua et al., 2012), adaptive achievement (Oolders et al., 2008), work reorganization (Chen et al., 2010), and sales achievement (Chen et al., 2012).

Individuals with better CQ could effectively control the cultural obstacles of international circumstances, and perform well in varied cultural situations than other people (Kim et al., 2008). Past research examines the relationship between expatriates CQ and working outcomes (Moon et al., 2012). Some researches (Ahn & Ettner, 2013; Ang et al., 2007; Rose et al., 2010) find a significant correlation between CQ and employee's performance. From above literature, CQ can be a strong predictor on foreigners' learning performance in different cultural environments. Therefore, this study has the following hypothesis:

H5: Cultural intelligence has a significant influence on foreign students' learning performance.

Metacognitive CQ is a key capability for increasing creative cooperation (Chua et al., 2012). Greater metacognitive CQ leads to improve cultural perception and decision-making, and significantly increases task performance (Ang et al., 2007). According to Ng et al., (2009), higher levels of Metacognitive CQ are connected to stronger degrees of reflection, including a stronger awareness of personal assumptions and views, and a greater ability to analyze their experiences from diverse viewpoints. An individual with better metacognitive CQ is also better at evaluating new experiences without being swayed by previous ones. Those people with greater metacognitive CQ are more likely to form clear plans and tactics, and hence are more willing to put their ideas in comprehension of circumstances. Therefore, this research has the following hypothesis:

H5a: Metacognitive CQ has a significant influence on foreign students' learning performance.

Peng et al. (2014) state that students with high motivational CQ and cultural identity would be better suitable for future jobs and with better working abroad opportunities. Chen et al., (2010) study the effects of motivational CQ on job adaptation and achievement. According to their findings, work adjustment mediates the effect between motivational CQ and job performance. According to Ng et al., (2009), person with better motivational CQ will have more concrete experiences in overseas, will become more motivated to search out the opportunity to evaluate their ideas and understanding of conditions, and will persevere in the face of difficult situations due to its greater aspirations and self-belief. Therefore, this research has the following hypothesis:

H5b: Motivational CQ has a significant influence on foreign students' learning performance.

2.3. Situational Factors

Better facilities encourage students in the desire to make a meaningful and valuable learning experience (Fink, 2003). Students' behavior, emotions, attitudes, and learning processes are influenced by people, institutions, and organizations (Saldana, 2013).

School facilities systems include classrooms, libraries, labs, workshops, equipment, electricity, water, desk, seats, restrooms, storage space, audiovisual and visual aids which can encourage students to learn (Akomolafe & Adesua, 2016). Learning facilities have included syllabus, teaching materials and equipment, schooling system, teacher-pupil ratio, budgets and guiding regulations, quality standards, and learning time (Ojeje & Adodo, 2018).

The circumstances of the school facilities are extremely important and have an impact on students' achievements. As a result, determining the extent to which facilities have an impact on learner performance is critical. Facilities are critical in providing students with favorable and comfortable equipment and other services (Earthman, 2002). School and campus facilities are tools for students and teachers to improve their learning and teaching processes in order to produce a constructive learning environment. To encourage student performance improvement, the school needs to understand the relationship between campus facilities and student outcome (Asiyai, 2012). Strong and effective facilities systems result in student performance improvement and success (Mokaya, 2013). Adequate sitting space in classroom , sufficient library, adequate equipped science laboratories, adequate water, and toilet facilities, and active involvement in co-curricular activities are all related to academic achievement (Mokaya, 2013).

Student performance rises when school infrastructure and building facilities increase (Hussain, 2014). A sufficient classroom with superior physical equipment has a considerable favorable impact on academic progress. Students who attend school with good infrastructure are more relaxed and can focus on their studies, resulting in higher grades (Hussain, 2014).

Social and campus supporting elements have a strong impact on students learning outcomes (Hwang et al., 2011). There is a link between social assistance and academic success, and greater campus support, better student achievement (Carini et al., 2006). Effective use of the resources that offers by institutions, and learning methods have an impact on the student's success (Norhidayah et al., 2009).

Foreign students are financially unstable struggling to deal with tuition and living expenses (Lee, 2017). Financial stress is linked to low academic performance among foreign students (Banjong, 2015). Having a job also harms overseas students' academic performance. A part-time job affects international students' experience with university life (Tamaoka et al., 2003) because it takes away time from them to focus on their studies or research. The relationship between economic change and educational accomplishment are found that financial resources are associated with their educational achievement (Beblo & Lauer, 2004).

This study mainly applies six indicators from Beatrice (2013) to measure the moderator role of situational factors, including facilities and school supports (such as financial, part-time job, resource, and assistance). These indicators are used to measure foreign students' situational factors while studying abroad.

2.3.1. Situational Factors' Moderating Effects

There are some studies indicating that situational factors can increase student motivation and interest on their studies. The teacher must have various motivating factors in the learners by controlling learning facilities (Akrim & Harfiani, 2019). Lack of physical facilities has shown to have a negative impact on student's motivation to learn. As a result, their academic performance suffers. It has been noticed that students perform poorly when they do not have access to basic needs such as library equipment and insufficient seating in classrooms (Akomolafe & Adesua, 2016). Students are more interested in learning when good physical facilities are available, leading to improved performance (Akomolafe & Adesua, 2016). Student performance is linked to their enjoyment with their academic setting, including the library, computer rooms, and other vital resources (Karemera, 2003).

Student perceptions of their learning environment have a strong impact on students' learning performance. Individuals who believe they are in a better learning situation perform better than those who think they are in a bad learning environment (Lizzio et al., 2002).

Above literature has showed situational factors influencing student motivation and learning performance. Better facilities and school support increase student motivation and their interest, which will influence student learning performance. So, the moderator role of situation factors influencing on the relationship between motivation and learning performance can be examined. This research has the following hypothesis:

H6a: Situational factors have a moderating effect on the relationship between motivation and foreign students' learning performance.

The greater way to learn a language or knowledge is to use facilities, and to communicate with other pupils. This approach of interaction benefits for all learners in different fields (Lei & Hu, 2019). Students can assist one another while working and communicating on various activities such as writing dialogues, conducting the interview, drawing, and providing comments to others (Callow, 2018). School facilities and school supports play an important role in improving these activities' quality. School may provide room and materials, and create some activities so that students have opportunities to directly interact with each other. Situational factors can influence and upgrade students' basic competencies (including communication, emotional intelligence, reflective thinking, and cultural intelligence). Teachers as tutors, students as trainees, and the environment as a supporter can all contribute to students' competencies (Khoirudin et al., 2016). The moderator role of infrastructure on performance has been discussed in Mutuku et al. (2021). School

infrastructure plays moderating effects on the relationship between students' competences and academic success (Mutuku et al., 2021). Therefore, this research has the following hypotheses:

H6b: Situational factors have a moderating effect on the relationship between communication competencies and foreign students' learning performance.

H6c: Situational factors have a moderating effect on the relationship between emotional intelligence and foreign students' learning performance.

H6d: Situational factors have a moderating effect on the relationship between reflective thinking and foreign students' learning performance.

H6e: Situational factors have a moderating effect on the relationship between cultural intelligence and foreign students' learning performance.

2.4. Learning Performance

Students' academic achievement is one of the most essential factors in the academic system (Rono, 2013). There are many ways to measure student learning performance. Academic achievement is a students' capacity to overcome numerous challenges in academic life and to meet the organizations' academic requirements (Baker & Siryk, 1999). Academic achievement is reflection of performance outcomes that show how well a student has met specific learning objectives (Ali et al., 2013), and demonstrates proficiency in extracurricular activities (Steinmayr et al., 2014). The grade is a common way used to measure student understanding, their learning achievement, and the development of skills competencies (York et al., 2015). Objective performance means that observation doesn't have any impact on the measurement tools. The measurement is performed by some tools which is set before. The common tools to evaluate student outcomes in the education field are GPA, examination, and credits. If students can't achieve the requirements, they will fail the course and can't graduate. Grade point average (GPA) is commonly used to estimate overseas students' academic performance. Most researches about student achievement commonly use objective indicators, class grades (Kassarnig et al., 2017; Teixeira, 2016), grade point average (GPA) (Wang et al., 2015), self-reported GPA (Kirschner & Karpinski, 2010), grade for the final exam (Lukkarinen et al., 2016), complete credits (Giunchiglia et al., 2018), and raking in the class (Felisoni & Godoi, 2018). However, GPA and grade are not consistently accurate indicators for learning or cognitive development (Arum & Roksa, 2011).

Subjective performance is based on observation more than objective performance. However, other factors can be used to measure a student's academic success, including things like effective or emotional states, attitude, and behavior, all of which are related to a student's abilities or skills. There are some ways to identify the quality of learning outcome. Brown (2004) describes the primary categories that define the

quality of learning is lower-order (such as knowledge, comprehension, application) and higher-order (such as analyzing, synthesis, evaluation) thinking skills.

This research applies subjective performance to measure foreign students' learning performance, which is about student's thoughts, opinions, and feelings about what abilities or skills students have learned and have improved from their studies in Taiwan. Dimbisso (2009) defines learning performance as academic success relates to the accomplishment of the subject. Academic performance conducted by the students to attain grades, marks, and scores. The learning outcome is the key criterion for measuring a student's abilities, as well as a method of evaluation for educational development and future career (Kieti, 2017). Komba et al., (2013) think student learning performance is a criterion for determining student potential to satisfy performance goals. Arikunto (2003) gives learning performance definition as observable and measurable actions in the given setting. Student learning performance is the level of achievement that students have accomplished toward the specific goals set by each field after attending a program for a specific time.

In this research, learning performance is defined as educational assessments of students' development related to everything acquired in school, including knowledge or skills presented after their learning processes and interaction with classmates and teachers.

This research applies indicators from Duque & Weeks (2010) to measure learning performance, which include individual perceptions about their abilities and skills improved after their learning and their satisfaction.

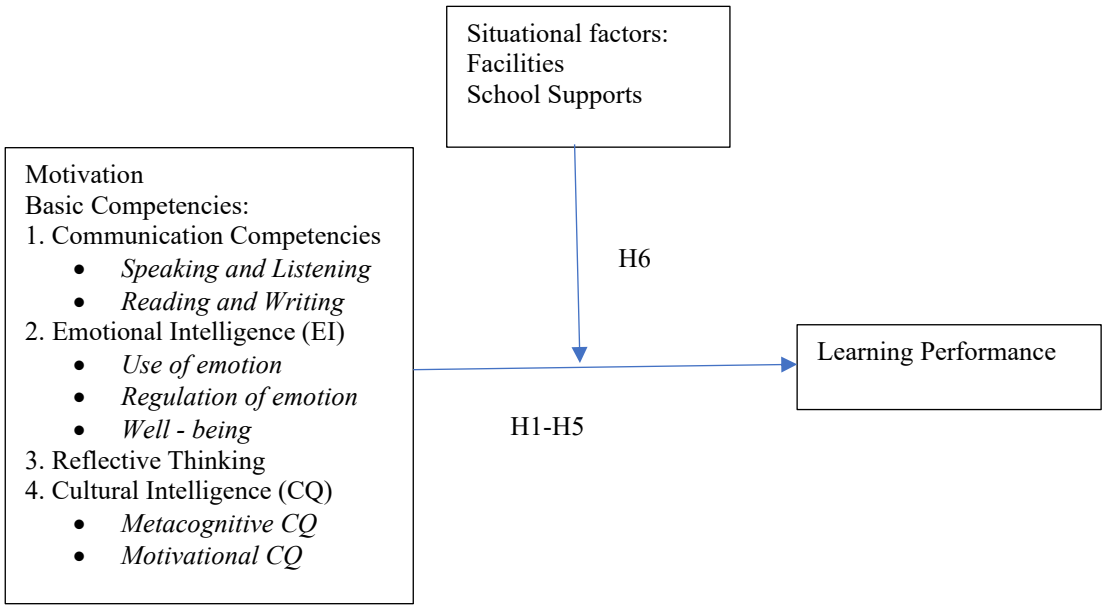
3. RESEARCH METHODOLOGY

This section examines the research framework, research method, population and sampling method, data collection method, operational definition, indicator measurement, and data analysis method.

3.1. Research Framework

Figure 3.1 represents the research framework of this study.

Figure 3.1 Research Framework



The research hypotheses are summarized as below.

H1: Motivation has a positive influence on foreign students' learning performance.

H2: Communication competencies have a positive influence on foreign students' learning performance.

H2a: Speaking and listening have a positive influence on foreign students' learning performance

H2b: Reading and writing have a positive influence on foreign students' learning performance.

H3: Emotional intelligence has a positive influence on foreign students' learning performance.

H3a: Use of emotion (UOE) has a positive influence on foreign students' learning performance.

H3b: Regulation of emotion (ROE) has a positive influence on foreign students' learning performance.

H3c: Well-being (WB) has a positive influence on foreign students' learning performance.

H4: Reflective thinking has a positive influence on foreign students' learning performance.

H5: Cultural intelligence has a positive influence on foreign students' learning performance.

H5a: Metacognitive CQ has a positive influence on foreign students' learning performance.

H5b: Motivational CQ has a positive influence on foreign students' learning performance.

H6a: Situational factors have a moderating effect on the relationship between motivation and foreign students' learning performance.

H6b: Situational factors have a moderating effect on the relationship between communication competencies and foreign students' learning performance.

H6c: Situational factors have a moderating effect on the relationship between emotional intelligence and foreign students' learning performance.

H6d: Situational factors have a moderating effect on the relationship between reflective thinking and foreign students' learning performance.

H6e: Situational factors have a moderating effect on the relationship between cultural intelligence and foreign students' learning performance.

3.2. Research Method

A quantitative research approach has been chosen to conduct this study. According to Adar (2014), the quantitative technique has the advantage of collecting large numbers of participants; and allows the researcher to conduct comparisons and to generalize a broader population.

3.3. Population and Sampling Size

3.3.1. Population

Foreign students who are studying in Taiwanese universities for their degrees are the population of this study. The population of foreign students in Taiwan is around one hundred thousand in Taiwan. This study sent an email to International Affair of 40 Taiwanese Universities in order to ask permission and their help to spread the questionnaire to foreign students. There were only three national universities and one private

university of International Affair Office responded and agreed to spread questionnaire. The real number of foreign students studying in these four Universities are 3129,165, 479 and 407 respectively.

3.3.2. Sampling Frame

After questionnaire survey, there are 607 returned, and 15 deleted because of several missing answers, the valid sample size is 592.

3.4. Data Collection Method

Online survey was the best way to collect data in Covid-19 circumstance. The online survey has advantages because it is easy to access respondents in the far distance, saving money and time.

After getting permission from four universities, a questionnaire file was emailed as an attachment to Office of International Affairs (OIA) to each university. After that, OIA helped to spread the questionnaire to their foreign students' email or Line groups. The data collection period was from November 21st to December 11th in 2021.

Questionnaires were based on a Likert scale from 1 to 5, with the criterion of strongly disagree, disagree, normal, agree, and strongly agree. Respondents needed to choose one single choice of each indicator to answer each question. According to the respondent's background and for them to understand questions easily and answer accurately, the questionnaire was designed and translated in multilingual languages including Chinese, English, Indonesian, and Vietnamese.

3.5. Operational Definitions

The operational definitions of each variable are described as followings. Motivation is defined as the characteristic drives people to do something or not to do something (Broussard & Garrison, 2004). Basic competences are including communication competencies, emotional intelligence, reflective thinking, and cultural intelligence. Communication competencies are defined as ability to communicate thoughts and ideas clearly and effectively in written and oral forms to person inside and outside of the institution (Nunamaker et al., 2020). Emotional intelligence (EQ) is defined as ability to recognize, express, comprehend, utilize, and manage emotions as a means of adjusting and enhancing performance (Salovey & Pizarro, 2003). Reflective thinking is defined as the use of experiences as a basic information for learning and updating personal understanding of existing theories (Bradley, 2013; Grossman, 2009). Cultural intelligence (CQ) is defined as multidimensional set of abilities that exist outside the cultural borders, and include knowledges and skills that have been formed in certain cultural situations (Sternberg et al., 2003). Learning performance is defined as Student’s ability to fulfill the program or course’s goals, achievement, and objectives. Situational factors are described as components of current circumstances or environment having influences on how people behave (Belk, 1975).

Motivations are measured by the following indicators: I want to get a good education, I want to master of a foreign language, it will open good employment opportunity with University degree, it is one of life goals, and it is a great personal value (Chirkov et al., 2007).

Communication competencies are measured by listening and speaking, and reading and writing (Rubin & Martin, 1994). Listening and speaking are measured by the following indicators: I know what topics we talk about in conversations with friends, I understand what teachers talk about in class, people understand what I want to express, it is easy to find the right word to express myself, I can express myself clearly while interacting with others, and I always have a lot of facial expression while telling something to others (Rubin & Martin, 1994). Reading and writing are measured by the following indicators: I understand the textbook contents, and I can finish school written assignments easily (Rubin & Martin, 1994).

Emotional intelligence is measured by use of emotion, regulation of emotion, and well-being (Petrides & Furnham, 2006). Use of emotion is measured by the following indicators: I always set goals for myself and then try my best to achieve them, I always tell myself I am a competent person, I am a self-motivated person, and I would always encourage myself to try my best (Petrides & Furnham, 2006). Regulation of emotion is measured by the following indicators: I am able to control my temper and handle difficulties rationally, I can always calm down quickly when I am very angry, and I have good control of my own emotions (Petrides & Furnham, 2006). Well-being is measured by the following indicators: I am pleased with my life on the whole, I believe I am full of personal strengths, and I generally believe that things will work out fine in my life (Petrides & Furnham, 2006).

Reflective thinking is measured by the following indicators: I sometimes question the way others do something and try to think of a better way, I like to think what I have been doing and consider alternative ways of doing it, I often reflect on my actions to see whether I could have improved on what I did, and I often re-appraise my experience so I can learn from it and improve for my next performance (Kember et al., 2000).

Cultural intelligence is measured by mtea-cognitive intelligence, and motivational intelligence (van Dyne et al., 2008). Meta-cognitive intelligence is measured by the following indicators: I am conscious of the cultural knowledge I use when interacting with people from different cultural backgrounds, I adjust my cultural knowledge when I interact with people from culture that is unfamiliar to me, I am conscious of the cultural knowledge which I can apply to cross-cultural interactions, and I would check the accuracy of my cultural knowledge when I interact with people from different cultures (van Dyne et al., 2008). Motivational intelligence is measured by the following indicators: I enjoy interacting with people from different cultures, I am confident that I can socialize with locals in a culture that is unfamiliar to me, I am sure I can deal with the stresses of adjusting to a culture that is new to me, I enjoy living in cultures that are

unfamiliar to me, and I am confident that I can get accustomed to shopping conditions in a different culture (van Dyne et al., 2008).

Situational factors are measured by facilities and school supports (Beatrice, 2013). Facilities are measured by the following indicators: I find university facilities (library, laboratories, computers, internet, …) are useful, and I know how to use University facilities to complete my assignments (Beatrice, 2013). School supports are measured by the following indicators: I find my classmates with all different backgrounds and they are very interesting and I have learned a lot from them, University arranged part time job, it's easy to find part time job here, and I know how to find academic resources and assistance (Beatrice, 2013).

Learning performance is measured by abilities improved and satisfaction (Duque& Weeks, 2010). Abilities improved is measured by the following indicators: I have improved my skills to manage, use, and analyze information; I have improved skills to communication effectively by comprehending, writing and speaking; I have improved planning and organizational abilities; I have improved my self-confidence, independence and personal initiative; I have improved my worldviews, and the way I interact with people; I have improved my personal values and ethics; and I have improved my problem-solving skills (Duque& Weeks, 2010). Satisfaction is measured by the following indicators: I am satisfied with my academic learning situation, and I am satisfied with my current life situation (Duque& Weeks, 2010).

3.6. Data Analysis Method

The collected data are analyzed by using SPSS 23 statistical stools and techniques to test the relationship between motivation, communication competencies, emotional intelligence, reflective thinking, cultural intelligence, situation factors, and foreign students' learning performance.

a. Descriptive statistics are used to describe the sample data.
b. Pearson correlation analysis is used for evaluating the relationship between variables.
c. Regression analysis is applied to test the relationship between the independent and dependent variables.
d. Canonical correlation analysis is applied to see the correlation between two sets of variables.
e. A common bias test is used to make sure there is no bias in the study. Harman's single factor is performed to see the results of common bias test.
f. Cronbach alpha is used to measure internal consistency and reliability of variables.

4. QUANTITATIVE ANALYSIS

This section will show the results of quantitative analysis. Respondent information, descriptive data analysis, Pearson correlation analysis, regression analysis, logistic regression analysis, common bias test, summary of results, discussion of hypotheses testing, and empirical findings will be described.

4.1. Respondent Information

Table 4.1 (see Appendix) shows the responses with 37.3% male students, and 62.7% female students. Most respondents come from Asia, 12.2% from Indonesian, 8.1% from Indian, 8.8% from Chinese, 22.8% from Vietnamese, 13.5% from Thailand, 8.6% from Hong Kong, 5.6% from Japanese, 3.4% from Malaysian, and 17.1% from other countries.

According to respondents' majors, 189 (31.9%) foreign students took management, 158 (26.7%) studied engineering, 65 (11%) studied languages, and the rest of the students took sciences, design, arts, humanities, and others.

Regarding English capability, almost haft foreign students think that they have good English capability around 274 (46.3%), and just 52 (8.8%) students show that they have poor and very poor English capability. There are more than 70% foreign students taking their master and PhD degree, and English capability is the main requirement for them to study in Taiwan.

However, 211 (35.6%) students state that their Chinese capability is poor and very poor, and only 21.9% international students think that they are good at Chinese, and 82 (13.9%) are excellent at Chinese. Only 5 (0.8%) students had average grade under 60, 74 (12.5%) got 61-70, 131 (22.1%) got 71-80, 250 (42.2%) got 81-90, and 132 (22.3%) got 91-100 for their GPA.

According to Table 4.2 (see Appendix), data shows Bachelor class 136 (23%), Master class 363 (61.3%), and PhD class 93 (15.7%). In terms of studying year, 140 (23.6%) is first-year students, 299 (50.5%) is the second year, 86 (14.5%) is the third year, 61 (10.3%) is the fourth year, and 6 (1%) is others. According to Table 4.3 (see Appendix) most of the respondents are taking management and engineering majors and master's degrees. According to Table 4.4 (see Appendix), most of the respondents are on their first year and second year of their studying.

4.2. Descriptive Data Analysis

4.2.1. Descriptive Analysis

Table 4.5 – 4.11 (see Appendix) show means and standard deviations for each indicator of independent, moderator, and dependent variables. Table 4.5 (see Appendix) shows mean and standard deviations of all motivation's indicators with an average mean value is 4.31. Table 4.6 (see Appendix) shows mean and standard deviations of communication competencies with an average mean value 4.07. Table 4.7 (see Appendix) shows mean and standard deviations of all emotional intelligence with an average mean value 4.07.

Table 4.8 (see Appendix) shown mean and standard deviations of all reflective thinking indicators with average mean value is 4.21. Table 4.9 (see Appendix) shown mean and standard deviations of all cultural intelligence indicators with an average mean value 4.16. Table 4.10 (see Appendix) shown mean and standard deviations of all situation factors indicators with average mean value 3.98. Table 4.11 (see

Appendix) shown mean and standard deviations of all learning performance indicators with average mean value 4.19.

4.2.2. Reliability Test

Table 4.12 (see Appendix) indicates that all variables have Cronbach Alpha between .713 and .933 which mean they have good reliability.

4.3. Pearson Correlation Analysis

Table 4.13 (see Appendix) shows all the Pearson Correlation Analysis results between each independent variable, including motivation, communication competencies, emotional intelligence, reflective thinking, cultural intelligence, moderator variables (situational factors) and learning performance. All the results state that there is correlation among them significant at the 0.01 and 0.05 level.

Table 4.13 (see Appendix) shows that motivation, communication competencies, emotional intelligence, reflective thinking, cultural intelligence, and situational factors have positive relationship with learning performance.

4.4. Regression Analysis

Regression analysis is used to demonstrate the relationship between independent, moderator and dependent variables. The results are shown in Table 4.14 - 4.15 (see Appendix). The results support the hypotheses H1, H4, and H5. H2 and H3 received partial supports only. The results support the hypotheses H2a, H3b, H3c, H5a, and H5b. The results do not support the hypotheses H2b, and H3a. The results support hypotheses H6a, and H6b. The results do not support the hypotheses H6c, H6d, and H6e.

Table 4.14 (see Appendix) shows the regression analysis results between motivation, speaking and listening, reading, and writing, use of emotion, regulation of emotion, well-being, reflective thinking, metacognitive CQ, motivational CQ and learning performance. From the results, adjusted R square is .598 that variables can affect 59.8.% on learning performance.

Motivation, speaking and listening, regulation of emotion, well-being, reflective thinking, metacognitive CQ, motivational CQ are significant at $\alpha < 0.05$. Motivation, speaking and listening, regulation of emotion, well-being, reflective thinking, metacognitive CQ, motivational CQ have positive relationship with learning performance. However, reading and writing and use of emotion are significant at $\alpha > 0.05$. This indicates that there are no relationships between two variables and learning performance. The composite of motivation, situational factors (MxSF), and composite of basic competencies, situational factors (CCxSF, EQxSF, RtxSF, CQxSF)) were entered in the model to see their interaction effect.

Table 4.15 (see Appendix) shows adjusted R square .594 that all variables can affect 59.4% on learning performance. There are significant at α of MxSF = .029 < 0.05 which means situational factor has moderating effect on the relationship between motivation and learning performance. α of CCxSF = .040 < 0.05 means situational factor has moderating effect on the relationship between basic communication

competencies and learning performance. EQxSF, RTxSF, and CQxSF have $\alpha > 0.05$, which mean situational factors don't have moderating effects on the relationship between emotional intelligence and foreign students' learning performance, on the relationship between reflective thinking and foreign students' learning performance, and on the relationship between cultural intelligence and foreign students' learning performance.

4.5. Logistic Regression Analysis

GPA is also one way to measure foreign students' learning performance. So, this research uses logistic regression to check the relationship between independent variables and GPA. To run logistic regression, this research recodes the GPA variables become two dummy variables which are under 70 and above 70. According to Taiwan education system, under 70 which means the master and PhD students can fail their course, and students will pass the course if their score is above 70.

To see the influence of situational factor effect between independent variables GPA, this research run the logistic regression without the situational factors. Table 4.16 (see Appendix) shows the results have significant model and the model is a good predictor. Furthermore, independent variables explain 10.3% for GPA.

On the Hosmer and Lemeshow Test shows the model is significant. Classification table shows that the model can predict 86% for GPA. Finally, students who are good at these skills will get higher GPA. The results shows that students who have high motivation, good at listening and speaking, reading, and writing, use of emotion, well- being will get high GPA.

4.6. Common Bias Test

Common bias test is used to make sure that there is no bias in this study. Hence there is no bias in this study, according to the result shown in Table 4.17 (see Appendix), percentage of variance is 33.682% which is lower than 50%.

4.7. Summary of the Results

From above analysis, Table 4.18 (see Appendix) provides the summary of hypotheses testing.

Table 4.18 Research Result Summary

Hypothesis	Empirical Support
H1: Motivation has a positive relationship with foreign students' learning performance.	**Yes**
H2: Communication competencies have a positive relationship with foreign students' learning performance.	**Partial**

H2a: Speaking and listening have a positive relationship with foreign students' learning performance	**Yes**
H2b: Reading and writing have a positive relationship with foreign students' learning performance.	**No**
H3: Emotional intelligence has a positive relationship with foreign students' learning performance.	**Partial**
H3a: Use of emotion (UOE) has a positive relationship with foreign students' learning performance.	**No**
H3b: Regulation of emotion (ROE) has a positive relationship with foreign students' learning performance.	**Yes**
H3c: Well – being (WB) has a positive relationship with foreign students' learning performance.	**Yes**
H4: Reflective thinking has a positive relationship with foreign students' learning performance.	**Yes**
H5: Cultural intelligence has a positive relationship with foreign students' learning performance.	**Yes**
H5a: Metacognitive CQ has a positive relationship with foreign students' learning performance.	**Yes**
H5b: Motivational CQ has a positive relationship with foreign students' learning performance.	**Yes**
H6a: Situational factors have a moderating effect on the relationship between motivation and foreign students' learning performance.	**Yes**
H6b: Situational factors have a moderating effect on the relationship between communication competencies and foreign students' learning performance.	**Yes**
H6c: Situational factors have a moderating effect on the relationship between emotional intelligence and foreign students' learning performance.	**No**
H6d: Situational factors have a moderating effect on the relationship between reflective thinking and foreign students' learning performance.	**No**
H6e: Situational factors have a moderating effect on the relationship between cultural intelligence and foreign students' learning performance.	**No**

4.8. Discussion on the Results of Hypotheses Testing

Motivation has a positive relationship with foreign students' learning performance. This finding confirms the observation of Trigueros & Navarro (2019) on that individuals with high levels of self-motivation are more engaged in class and make better judgments, and have higher academic success.

Speaking and listening have a positive relationship with foreign students' learning performance. This finding confirms the observation of Goldfinch & Hughes (2007) on that students are good at listening, speaking, and expressiveness skills will be easier to exchange information with advisors, school administration, and classmates.

Logistic regression analysis results show that Students who have high motivation, good at listening and speaking, reading, and writing, use of emotion, well-being will get high GPA.

Regulation of emotion (ROE) has a positive relationship with foreign students' learning performance. Well - being (WB) has a positive relationship with foreign students' learning performance. Students with higher use of emotion will control their feeling better and can motive themselves to improve learning. Not all emotional intelligence categories have significant impact on performance and satisfaction (Greenidge et al., 2014) because each dimension covers diverse areas which lead to different outcome.

Reflective thinking has a positive relationship with foreign students' learning performance. Metacognitive CQ has a positive relationship with foreign students' learning performance. Motivational CQ has a positive relationship with foreign students' learning performance.

Situational factors have a moderating effect on the relationship between motivation and foreign students' learning performance. Situational factors have a moderating effect on the relationship between communication competencies and foreign students' learning performance.

4.9. Empirical Findings

Regression analyses show that there are the relationships between motivation, basic communication competencies, listening and speaking, emotional intelligence (use of emotion, regulation of emotion, well-being), reflective thinking, cultural intelligence (metacognitive CQ, motivational CQ), and international students' learning performance (Sig < 0.05). Situational factors also have moderate relationship on the relationship between motivation and foreign students' learning performance, and on the relationship between communication competencies and foreign students' learning performance.

Particularly, Figure 4.1 (see Appendix) shows that student motivation has a linear influence on foreign students' learning performance. The horizontal axis represents foreign students' motivation level, that with higher value will have higher motivation. The vertical axis represents students' learning performance, that with higher value have better learning performance. Orange line is the composite of motivation and school facilities which represents interaction effect direction (SFFxmotivation). Green line is the composite of motivation and school support which represents interaction effect direction (SFSxmotivation). Figure 4.1 (see Appendix) shows that motivation has more sloping graph, getting saturated and going decline in after.

Figure 4.2 (see Appendix) shows that student communication competencies have a linear influence on foreign students' learning performance. The horizontal axis represents foreign student's basic communication competencies level, that with higher value will have better basic communication competencies skill. The vertical axis represents students' learning performance, that with higher value have better learning performance. Orange line is the composite of basic communication and school facilities which represents interaction effect direction (SFFxcommunication). Green line is the composite of basic communication and school support which represents interaction effect direction (SFSxcommunication). Figure 4.2 shows that basic communication competencies have more sloping graph, getting saturated and going decline in after.

5. CONCLUSION AND SUGGESTIONS

This section consists research summary and contribution of this research, implications, and limitations of this research and suggestions for future research.

5.1. Summary of this Research and Contribution of this Research

Motivation, speaking and listening, regulation of emotion, well-being, reflective thinking, cultural intelligence, metacognitive cultural intelligence, and motivational cultural intelligence have positive relationship with foreign students' learning performance. Partial empirical support on communication competencies, and emotional intelligence influencing foreign students' learning performance are found. Reading and writing, and use of emotion don't have any influence on foreign students' learning performance. The contribution of this research is to build a model including motivational and behavioral factors for examining the effect of motivation, communication competencies (including listening, speaking, reading, and writing), emotional intelligence (including UOE, ROE, and well-being), reflective thinking, cultural intelligence (including metacognitive and motivational CQ) on foreign students' learning performance. This research also supports the situational factors as moderating role to influence on the relationships between motivation and learning performance, and the relationships between communication competencies and learning performance.

5.2. Implication of this Research

This section gives some advise for educational institutions, foreign students, government, limitations of this research and suggestions for future research.

5.2.1. Advise for Educational Institution

Institutions, lecturers, departments, peers, and consultants who have interaction opportunities with foreign students can encourage them to develop interpersonal relationships inside and outside campus. Educational institutions can hold recruitment events available for foreign students.

Foreign students need more supports from their school in improving communication ability. School can provide some soft skills courses, social and school activities available for foreign students to have opportunities to meet and interact with other people. Students with higher emotional intelligence can drive them to improve their learning performance. Education institutions can test foreign students EQ by providing useful direction and training, or activities.

Reflective thinking is relevant to students' learning performance. The class shall create some activities such as critical thinking, logical argument, and solving problem methods making students to think about how to analyze information, and make personal judgment.

The institutions shall provide foreign students with cultural intelligence test to see their adaptations abilities before they enter university. This test can help institutions to know about their students' cultural adaptation ability. Institutions should focus on improving, and maintaining their facilities and infrastructure to continuing support students' learning.

5.2.2. Advise for Foreign Students

Foreign students need to have well-prepared before departure and need to motivate themselves by setting the goals such as getting a good grade, job, and learning a new language. The inspiration can assist them in overcoming many difficulties. The facilities and school supports play an important role. Foreign students should choose the school with good physical facilities, supporting program, and study environment.

5.2.3. Advise for Government

Taiwan doesn't have any programs available for keeping foreign students staying in Taiwan after graduation. Many foreign students expect to have good job opportunities in Taiwan after graduations. Many companies also need talent foreign workers. Taiwanese government can help to create internship opportunities or recruitment programs in Taiwanese companies available for foreign students. The government agents can act as a bridge role between them.

5.3. Limitations of this Research and Suggestion for Future Research

This research only focuses on motivational and behavioral factors' influences on foreign students' learning performance based on the observations of four universities only. Future research can analyze learning style, teaching style, social adjustment, language barrier, family supports and other difficulties such as financial struggles, that influence foreign students' learning performance. Future research can explore more schools, and observe for longer time to see the processes of progress of the foreign students. Future research can try to find the differences of learning and adaptation processes between South East Asian students.

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7.APPENDIX

Table 4.1 Respondent Information

	Demographic	N = 592	
		Frequency	**Percent (%)**
Gender	Male	221	37.3
	Female	371	62.7
	Total	**592**	**100**
Nationality	Indonesian	72	12.2
	Indian	48	8.1
	Chinese	52	8.8
	Vietnamese	135	22.8
	Thailand	80	13.5
	Hong Kong	51	8.6
	Japanese	33	5.6
	Malaysian	20	3.4
	Others	101	17.1
	Total	**592**	**100**
Age	Under 23	103	17.4
	23 – 26	225	38.0
	27 – 30	179	30.2
	31 – 34	47	7.9
	35 – 38	16	2.7
	39 – 42	10	1.7
	Above 42	12	2.0
	Total	**592**	**100**
Stay duration	Less than 6 months	53	9
	6 - 12 months	71	12
	13 - 18 months	100	16.9
	19 - 24 months	68	11.5
	25 - 30 months	145	24.5
	31 - 36 months	71	12
	37 - 42 months	15	2.5

	43 - 48 months	35	5.9
	More than 48 months	34	5.7
	Total	**592**	**100**
University	A University	110	18.6
	B University	48	8.1
	C University	67	11.3
	D University	367	62
	Total	**592**	**100**
Major	Management	189	31.9
	Sciences	17	2.9
	Engineering	158	26.7
	Design	47	7.9
	Languages	65	11
	Arts	47	7.9
	Humanities	16	2.7
	Others	53	9
	Total	**592**	**100**
English capability	Very Poor	16	2.7
	Poor	36	6.1
	Normal	151	25.5
	Good	274	46.3
	Excellent	115	19.4
	Total	**592**	**100**
Chinese capability	Very Poor	76	12.8
	Poor	135	22.8
	Normal	170	28.7
	Good	129	21.8
	Excellent	82	13.9
	Total	**592**	**100**
GPA	Under 60	5	0.8
	61 – 70	74	12.5
	71 – 80	131	22.1

	81 – 90	250	42.2
	91 – 100	132	22.3
	Total	**592**	**100**

Table 4.2 Respondents' Degree and University Year

		University year					
		First year	Second year	Third year	Fourth year	Other years	**Total**
Degree	Bachelor	18	28	44	44	2	**136**
	Master	98	244	17	4	0	**363**
	PhD	24	27	25	13	4	**93**
	Total	**140**	**299**	**86**	**61**	**6**	**592**

Table 4.3 Respondents' Major and Degree Distribution

		Degree			**Total**
		Bachelor	Master	PhD	
Major	Management	59	110	20	**189**
	Sciences	2	8	7	**17**
	Engineering	29	88	41	**158**
	Design	14	31	2	**47**
	Languages	10	50	5	**65**
	Arts	3	44	0	**47**
	Humanities	2	8	6	**16**
	Others	17	24	12	**53**
	Total	**136**	**363**	**93**	**592**

Table 4.4 Respondents' Major and University year

		University_year	Total

		First-year	Second-year	Third-year	Fourth-year	Others	
Major	Management	52	79	31	25	2	**189**
	Sciences	6	4	4	2	1	**17**
	Engineering	26	90	27	14	1	**158**
	Design	7	28	6	6	0	**47**
	Languages	19	38	3	5	0	**65**
	Arts	4	41	2	0	0	**47**
	Humanities	8	4	3	0	1	**16**
	Others	18	15	10	9	1	**53**
Total		**140**	**299**	**86**	**61**	**6**	**592**

Table 4.5 Mean Value of Motivations (M)

	Item	Mean	Std.
M1	I want to get a good education.	4.40	.656
M2	I want to master a foreign language.	4.33	.745
M3	It will open good employment opportunities for me with university degree.	4.41	.675
M4	It is one of my life goals.	4.14	.807
M5	It is a great personal value to me.	4.27	.753
	Motivation average	**4.31**	**.727**

Table 4.6 Mean Value of Basic Communication Competencies (CC)

	Item	Mean	Std. Deviation
CLS1	In conversations with friends, I know what topics we talk about.	4.28	.701
CLS2	I understand what teachers talk about in class.	4.19	.783
CLS3	People understand what I want to express.	4.06	.836
CLS4	It is easy to find the right word to express myself.	4.08	.817
CLS5	I can express myself clearly while interacting with others.	4.05	.790

CLS6	I always have a lot of facial expression while telling something to others.	3.87	.906
CRW1	I understand the textbook contents.	4.03	.804
CRW2	I can finish school written assignments easily.	3.97	.833
	Basic communication competencies average	**4.07**	**.809**

Table 4.7 Mean Value of Emotional Intelligence (EQ)

	Item	Mean	Std. Deviation
UOE1	I always set goals for myself and then try my best to achieve them.	4.13	.801
UOE2	I always tell myself I am a competent person.	4.08	.815
UOE3	I am a self-motivated person.	4.10	.861
UOE4	I would always encourage myself to try my best.	4.19	.755
ROE1	I am able to control my temper and handle difficulties rationally.	4.07	.817
ROE2	I can always calm down quickly when I am very angry.	3.95	.882
ROE3	I have good control of my own emotions.	3.98	.878
WB1	On the whole, I am pleased with my life.	4.08	.838
WB2	I believe I am full of personal strengths.	4.05	.867
WB3	I generally believe that things will work out fine in my life.	4.08	.848
	Emotional Intelligence average	**4.07**	**.836**

Table 4.8 Mean Value of Reflective Thinking (RT)

	Item	Mean	Std.
RT1	I sometimes question the way others do something and try to think of a better way.	4.16	.744
RT2	I like to think over what I have been doing and consider alternative ways of doing it.	4.18	.676
RT3	I often reflect on my actions to see whether I could have improved on what I did.	4.22	.685

RT4	I offer re-appraise my experience so I can learn from it and improve for my next performance.	4.26	.696
	Reflective thinking average	**4.21**	**.700**

Table 4.9 Mean Value of Cultural intelligence (CQ)

	Item	Mean	Std.
ME1	I am conscious of the cultural knowledge I use when interacting with people from different cultural backgrounds.	4.15	.796
ME2	I adjust my cultural knowledge when I interact with people from culture that is unfamiliar to me.	4.20	.674
ME3	I am conscious of the cultural knowledge which I can apply to cross-cultural interactions.	4.09	.752
ME4	I would check the accuracy of my cultural knowledge when I interact with people from different cultures.	4.14	.737
MO1	I enjoy interacting with people from different cultures.	4.33	.690
MO2	I am confident that I can socialize with locals in a culture that is unfamiliar to me.	4.11	.788
MO3	I am sure I can deal with the stresses of adjusting to a culture that is new to me.	4.14	.767
MO4	I enjoy living in cultures that are unfamiliar to me.	4.08	.906
MO5	I am confident that I can get accustomed to shopping conditions in a different culture.	4.23	.722
	Cultural Intelligence average	**4.16**	**.759**

Table 4.10 Mean Value of Situation Factors (SF)

	Item	Mean	Std. Deviation
SF1	I find university facilities (library, laboratories, computers, internet, ...) are useful.	4.21	.783
SF2	I know how to use university facilities to complete my assignment.	3.67	1.091
SS1	I find my classmates with all different backgrounds. They are very interesting and I have learned a lot from them.	4.04	.797
SS2	University arranges part-time job.	4.10	.808
SS3	It's easy to find a part-time job here.	4.11	.827
SS4	I know how to find academic resources and assistance.	3.75	1.052
	Situation factors average	**3.98**	**.893**

Table 4.11 Mean Value of Learning Performance (P)

	Item	Mean	Std. Deviation
PI1	I have improved my skills to manage, use, and analyze information.	4.24	.702
PI2	I have improved skills to communication effectively by comprehending, writing and speaking.	4.21	.724
PI3	I have improved planning and organizational abilities.	4.11	.765
PI4	I have improved my self– confidence, independence and personal initiative.	4.24	.722
PI5	I have improved my worldviews, and the way I interact with people.	4.26	.690
PI6	I have improved my personal values and ethics.	4.23	.705
PI7	I have improved my problem – solving skills.	4.25	.688
PS1	I am satisfied with my academic learning situation.	4.04	.872
PS2	I am satisfied with my current life learning situation.	4.12	.868
	Learning Performance average	**4.19**	**.748**

Table 4.12 Reliability Test of Variables

Variables	Cronbach Alpha
Motivation	.713
Listening and speaking (CLS)	.840
Listening and speaking (CRW)	.797
Use of Emotion (UOE)	.861
Regulation of Emotion (ROE)	.871
Well – being (WB)	.838
Reflective thinking	.786
Metacognitive CQ (ME)	.789
Motivational CQ (MO)	.847
Skill improved	.888
Overall satisfaction	.838

Table 4.13. Pearson Correlation Analysis between M, CLS, CRW, UOE, ROE, WB, RT, ME, MO, SF, SS, PI and PS.

	M	CLS	CRW	UOE	ROE	WB	RT	ME	MO	SF	SS	PI	PS
M	1												
CLS	.280**	1											
CRW	.228**	.775**	1										
UOE	.189**	.425**	.382**	1									
ROE	.134**	.433**	.388**	.744**	1								
WB	.138**	.437**	.390**	.678**	.776**	1							
RT	.244**	.484**	.435**	.500**	.463**	.477**	1						
ME	.291**	.530**	.459**	.451**	.430**	.447**	.546**	1					
MO	.300**	.583**	.501**	.459**	.461**	.489**	.542**	.690**	1				
SF	.349**	.489**	.430**	.385**	.400**	.402**	.386**	.423**	.432**	1			
SS	.278**	.431**	.384**	.345**	.376**	.387**	.347**	.359**	.400**	.760**	1		
PI	.369**	.594**	.512**	.471**	.408**	.476**	.616**	.611**	.606**	.501**	.426**	1	
PS	.301**	.594**	.484**	.408**	.437**	.491**	.451**	.449**	.499**	.541**	.505**	.710**	1

** Correlation is significant at the 0.01 level (2-tailed).

Table 4.14. Linear Regression Analysis of Motivation, Speaking and Listening, Reading and Writing, Use of Emotion, Regulation of Emotion, Well Being, Reflective Thinking, Metacognitive CQ, Motivational CQ, and Learning Performance

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.777[a]	0.604	0.598	0.36266

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	116.819	9	12.98	98.692	.000[b]
	Residual	76.544	582	0.132		
	Total	193.364	591			

a. Dependent Variable: Learning_performance

b. Predictors: (Constant), Motivation, EI_UOE, Communication_RW, CI_ME, Reflection_Thinking, EI_WB, CI_MO, Communication_SP, EI_ROE

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-0.092	0.162		-0.568	0.570
	Motivation	0.168	0.032	0.146	5.240	0.000
	Communication_SP	0.240	0.043	0.253	5.595	0.000
	Communication_RW	0.023	0.032	0.030	0.721	0.471
	EI_UOE	0.041	0.035	0.048	1.161	0.246

	EI_ROE	0.069	0.035	0.092	1.952	0.015
	EI_WB	0.136	0.032	0.184	4.209	0.000
	Reflection_Thinking	0.242	0.036	0.231	6.698	0.000
	CI_ME	0.140	0.038	0.142	3.690	0.000
	CI_MO	0.106	0.037	0.114	2.841	0.005

a. Dependent Variable: Learning_performance

Table 4.15. Linear Regression Analysis of Motivation, Basic Communication Competencies, Emotional Intelligence, Reflective Thinking, Cultural Intelligence, and Learning Performance with Situational Factors as Moderator Variables

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.775[a]	0.601	0.594	3.28

ANOVA[a,b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9411.602	10	941.16	87.478	.000[c]
	Residual	6250.842	581	10.759		
	Total	15662.444	591			

a Dependent Variable: Learning_performance

b Predictors: (Constant), CIxSF, Motivation, Emotional_Intelligence, MxSF, EIxSF, Communication_Competences, Reflection_Thinking, RTxSF, CCxSF, Cultural_Intelligence

Coefficients[a]

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.

		B	Std. Error	Beta		
1	(Constant)	-18.352	7.767		-2.363	.018
	Motivation	.321	0.059	0.155	5.476	.000
	Communication_Competencies	.282	0.037	0.266	7.621	.000
	Emotional_Intelligence	.090	0.026	0.115	3.423	.001
	Reflection_thinking	.562	0.082	0.239	6.874	.000
	Cultural_Intelligence	.249	0.04	0.239	6.214	.000
	MxSF	1.522	1.053	0.041	1.445	.029
	CCxSF	2.311	1.122	0.072	2.06	.040
	EQxSF	-.108	0.846	-0.004	-0.127	.899
	RTxSF	1.286	1.274	0.034	1.009	.313
	CQxSF	-1.886	1.369	-0.053	-1.377	.169

a. Dependent Variable: Learning_performance

Table 4.16. Logistic Regression without Situational Factors

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	34.256	9	.000
	Block	34.256	9	.000
	Model	34.256	9	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	430.920[a]	0.056	0.103

a Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	10.382	8	.239

Classification Table[a]

Observed			Predicted		
			GPAN		Percentage Correct
			Fail (Under 70)	Pass (Above 70)	
Step 1	GPAN	Fail (Under 70)	0	79	.0
		Pass (Above 70)	4	509	99.2
	Overall Percentage				86.0

a The cut value is .500

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	Motivation	.780	.252	9.585	1	.002	2.182	1.331	3.575
	CSP	.813	.359	5.136	1	.023	2.255	1.116	4.557
	CRW	.171	.262	0.426	1	.514	1.186	0.71	1.983
	EI_UOE	.598	.312	3.662	1	.056	1.818	0.986	3.352
	EI_ROE	-.927	.331	7.842	1	.005	.396	0.207	0.757
	EI_WB	.249	.274	0.822	1	.365	1.282	0.749	2.194

	RT	-.016	.317	0.002	1	.960	.984	0.529	1.831
	CI_ME	-.457	.322	2.009	1	.156	.633	0.337	1.191
	CI_MO	-.373	.327	1.300	1	.254	.689	0.363	1.308
	Constant	-1.569	1.289	1.48	1	.224	.208		

a Variable(s) entered on step 1: Motivation, Communication_SP, Communication_RW, EI_UOE, EI_ROE, EI_WB, Reflection_Thinking, CI_ME, CI_MO.

Table 4.17. Harman's Single Factor Score

Total	% of Variance	Cumulative %
17.178	33.682	33.682

Figure 4.1.Plot of Situational Factors Moderating Role on Motivation and Performance

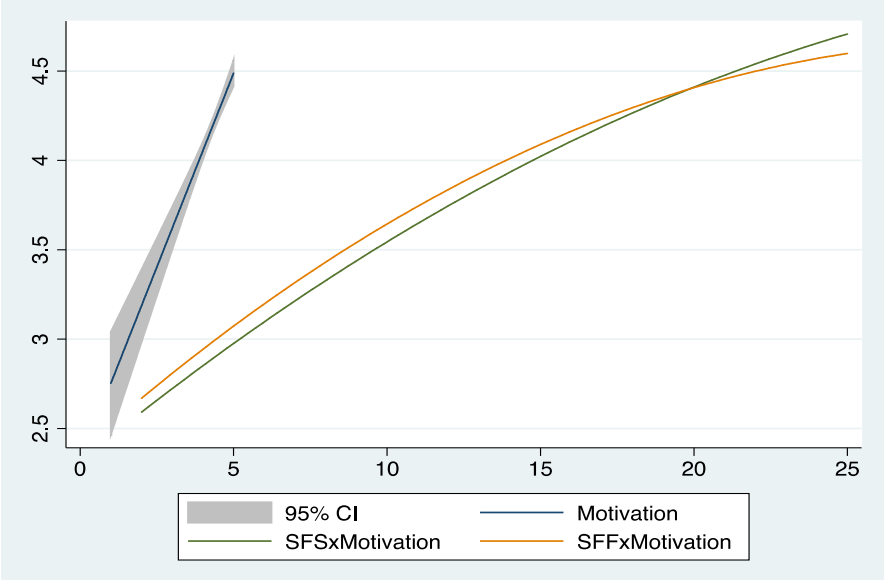
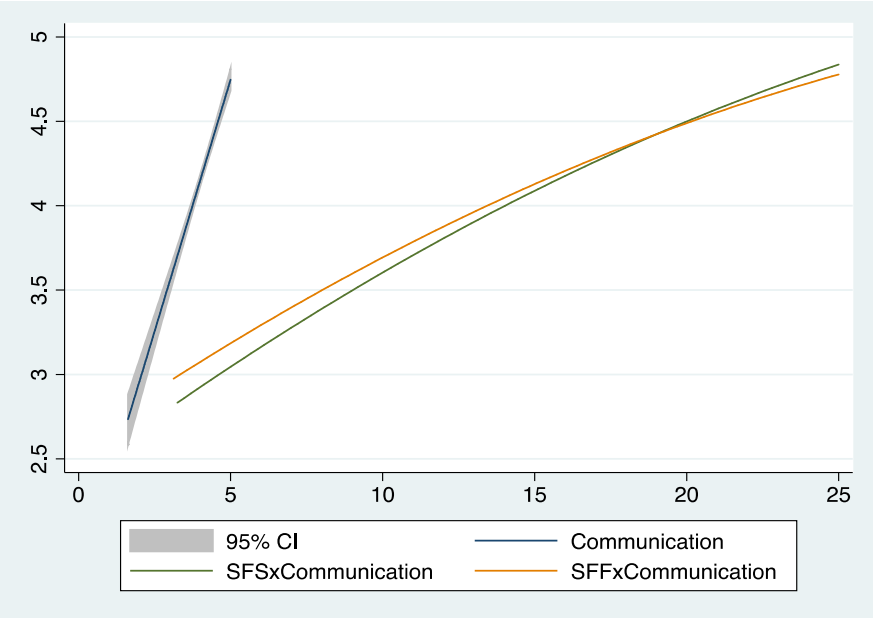


Figure 4.2 Plot of Situational Factors Moderating Role on Communication Competencies and Learning Performance



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What Matters the Most in Influencer Marketing Communication?

Source, Message, or Media?

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WHAT MATTERS THE MOST IN INFLUENCER MARKETING? SOURCE, MESSAGE, OR MEDIA?

Abstract

Purpose: Despite the popularity of influencer marketing, researchers and marketers still lack an adequate understanding of the mechanism through which social media influencers create opportunities for the firms. The study proposes an integrated model to account for the credibility of the social media influencer, message and media in developing trust in influencers' posts, which in turn impact the consumers' urge to purchase impulsively.

Methodology/Design: To test the proposed model, we surveyed the social networking sites (SNS) users who followed any social media influencer and we employed Partial least square path modeling to analyze the data.

Findings:- Results highlighted that influencers' credibility (perceived similarity, perceived trustworthiness, and perceived expertise), influencer's content's credibility (information value and vicarious expression), and platform credibility (transparency and interactivity) positively impact trust on influencers' posts which subsequently influence their desire to buy impulsively.

Originality/Value: The current study is preliminary research to understand an underlying mechanism by which digital influencers create opportunities for firms by influencing consumer purchasing behavior through their credibility and the credibility of the message and media.

Practical Implications: This research provides valuable insights about how social media influencers can be positioned more effectively in brand promotion by increasing their credibility, curating their content, and selecting the best platform.

Keywords*: Influencer credibility, message credibility, media credibility, urge to buy impulsively, Trust*

1. Introduction

In today's technological era, social networking sites (SNS) have become a ubiquitous aspect of life for much of the world. Marketers cannot neglect the contribution of digital influencers in social media marketing (Hudders et al., 2021). Although these digital influencers are ordinary people in the world of social media, because of their massive fan base, they have developed the ability to control people's lives, attitudes, behaviors, and purchasing decisions (Jin et al., 2019). These digital influencers have created an entirely highly competitive and strategic marketing strategy known as Online Influencer Marketing (OIM). OIM is a marketing strategy in which the marketer uses the resources of digital influencers to market their offerings to the target segment. OIM is a growing industry because the spending on influencer marketing is estimated to reach $16.4 bn (Influencer Marketing Hub, 2022).

During the past decade, radical changes in the pattern of consumer buying behavior have been observed (Leung, Gu, & Palmatier, 2022). The change in consumer behavior can easily be observed because Consumers are becoming increasingly skeptical of direct marketing and less interested in traditional forms of advertising (Cheung, Leung, Aw, & Koay, 2022). Brands are relying on digital influencers as a viable alternative to these highly paid traditional celebrities in this situation. Influencers endorse brands by incorporating them into their real-life content, making OIM content more authentic. Furthermore, shorter economic cycles have made firms more cost-conscious. Instead of paying exorbitant fees to traditional celebrity endorsers, firms find digital influencers more economic and effective (Leung et al., 2022). For example, a recent study concludes that return on investment (ROI) is way more in the case of OIM than the traditional celebrity endorsements (Ahmad, 2018).

In response to the growing popularity of influencer marketing, a few studies explored the impact of influencer and content features on brand and influencer-related outcomes (Cheung et al., 2022; Lou & Yuan, 2019; Sharif, 2021). However, researchers and marketers must properly

comprehend how digital influencers generate business opportunities (Cheung et al., 2022). For example, while digital influencers transmit brand-related information, consumers are likely to ignore it if they do not find it appealing, implying that the digital influencers' effectiveness extends beyond content exposure. Thus, credibility or likeness of the influencer may also be equally important (Masuda, Han, & Lee, 2022). Similarly, many studies have investigated the credibility of influencers in influencing brand-related outcomes. Still, those studies fall short by failing to recognize that the effectiveness of influencer marketing is accompanied by other factors such as content and platform characteristics (Leung et al., 2022). Concurrently, prior research has argued that the platform where influencers post their content is also essential (Li & Suh, 2015).

Moreover, the literature highlights that marketer leverage the trust relationship that the influencer has developed with the consumers to market their offerings. Given the complexities of the digital influencers campaign, it appears that several questions regarding the best influencer strategy are dependent on several factors like campaign objectives, platform selection, and a clear understanding of how to combine influencer characteristics, content characteristics, and platform characteristics effectively that would provide valuable insights for firms (Cheung et al., 2022; Masuda et al., 2022; Ye et al., 2021).

This study takes a theory-integration approach to fill the abovementioned gaps, combining persuasion and social capitalization theories. The impact of influencer characteristics (trustworthiness, expertise, and similarity), content characteristics (information quality and vicarious expressions), and platform characteristics (transparency and interactivity) on trust is investigated in this study. This study also investigates the subsequent impact of trust on the urge to buy impulsively. The following research questions are addressed in the study: What is the best combination of an influencer's attributes, the attributes of his content, and the attributes of the platforms that foster trust in the influencers? What is the effect of trust in influencers' posts on

consumers' urge to buy impulsively? Does persuasion knowledge affect the effectiveness of influencer marketing?

By addressing the proposed research questions, the study provides several contributions. First, in marketing research, the best combination of characteristics of influencers, content, and platform to drive consumer trust in influencers has gone unexplored. This study adds to the marketing literature by operationalizing influencer, content, and platform characteristics in a single model and empirically investigating the importance of these factors in developing the level of trust with influencers. Second, studies investigating the role of trust in influencers' posts instigating consumers' desire to purchase impulsively are scarce. Third, by application of social capital theory and persuasion theory in the context of SMI marketing, this research contributes to the body of knowledge about the said two theories. This study also gives practitioners insights into developing optimum marketing strategies in collaboration with influencers to foster followers' relationships with the influencers and the brands endorsed by them. Furthermore, in response to the call by Lou and Yuan, 2019, the role of persuasion knowledge in persuasion mechanism has also been considered in this study with a view to provide valuable insights to the researchers, marketers and businesses.

2. Literature

2.1.Theory of persuasion

Persuasion is a mechanism aimed at influencing the attitude or behavior of a person. Persuasion theory employs ELM (Elaboration likelihood model), which is composed of central & peripheral routes (Petty et al.,1981). In the central route, information is assessed as to what extent it supports one's values. On the other hand, in peripheral-route, one evaluates the attractiveness of the source without much deliberation (Dotson & Hyatt, 2000). The persuasion theory can be applied in the context of social media influencers by considering that the followers of social media influencers

characterize the influencers (they follow), their message/content, and the platform, which may affect their behavioral outcomes (UTB). **Fig. 1** presents the conceptual framework of the present study. We theorized that influencers' attributes, content attributes, and platform attributes tend to condition followers' characterizations of them. Such characterization activates followers' peripheral routes in the form of trust, which lead to behavioral intention.

2.2. Social capital theory

Influencer marketing facilitates firms to manipulate influencers' (i) networks; (ii) positions; (iii) content; and (iv) followers' trust in influencing consumer behavior to derive favorable outcomes for the firms. With this perspective, the four resources of influencers: their credibility, their content's and media's credibility, and the trust in their branded posts represent valuable resources for the firms. To theorize influencer marketing as a tool to leverage influencers' resources, we have drawn arguments from social capital theory which seeks to explain the performance-yielding capabilities of influencer marketing. The social capital theory postulates that the resources available through network relationships can be used for purposive actions (Adler & Kwon, 2002). These perspectives encourage marketers to leverage influencers' resources (network) to enhance their marketing efforts' effectiveness. The social capital theory also suggests that critical sources of social capital are the level of Trust (Nahapiet & Ghoshal, 1998). A higher level of trust encourages people to engage in social exchange. As consumers are skeptical of the direct marketing efforts of the firms, trust in influencers' branded posts serves as a valuable resource for marketers.

2.3.Influencers' Credibility----Source

The influencer's credibility is important in persuasive communication (Ohanian, 1990). Literature used source credibility to examine sources' influence on the communication's effectiveness (Hovland & Weiss 1951). Credibility is the most influential element in the effectiveness of brand endorsement (Kapitan & Silvera, 2016; Parmar et al., 2020; Wang & Scheinbaum, 2018; Zhu et al., 2020). The most renowned model for assessing credibility includes the source credibility model (Ohanian, 1990). Ohanian (1990) explained source credibility as a construct based on three dimensions: expertise, trustworthiness and attractiveness. Studies have examined the effect of source credibility on both influencer and brand-related outcomes (for example Cheung et al., 2022; Lou & Yuan, 2019; Sharif, 2021). In the light of the practice of influencer marketing, we identified three characterizations of influencers' credibility constructs: trustworthiness, perceived expertise, and similarity (Ohanian, 1990; Ki & Kim, 2019; Munakka et al., 2017; Schouten et al., 2020). Compared to traditional celebrities, influencers usually endorse products/services in real-life & authentic situations, which tend to enhance trust in influencers' branded posts. Trustworthiness refers to the source's reliability, dependability, and honesty (Ohanian, 1990). Uzunoğlu and Kip (2014) asserted that digital influencers seem more trustworthy as they show that they have used the products/brands in their daily lives. Influencers endorse a brand in real-life situations and are seen as more credible than commercial endorsements (Russell et al., 2017). A study by Hu et al. (2019) highlighted that trustworthiness in the communicator tends to impact buying behavior. Trustworthiness is an essential aspect of making digital celebrities more influential and credible and tends to play a crucial role in enhancing trust in the commercial content of the influencer. Moreover, previous research has demonstrated that endorsers' trustworthiness characteristics positively impact consumers' intention to buy the endorsed product (e.g., Lee and Koo, 2015). Therefore, we hypothesized that the trustworthiness

on influencers would positively affect consumers' urge to buy the endorsed brand impulsively. Thus we postulate that:-

H1. *Greater perceived trustworthiness increases the followers' trust in the branded posts of the influencers*

H1a. *Greater perceived trustworthiness increases influencers' followers' urge to buy impulsively*

On the other hand, the source's expertise refers to the extent to which an endorser is perceived to be experienced, competent, general, and knowledgeable and thus serve as a helpful source (Erdogan, 1999). Djafarova and Rushworth (2017) found that SNSs users trust the influencers' branded posts because they perceived that the influencer has expertise about the product he endorses. Moreover, studies also found that the perceived match between the endorser's expertise and the product positively impacts purchase intention (Michaelsen, Knight, & Fink, 2004, Thomas & Johnson, 2017). In line with these arguments, the impact of perceived expertise is postulated as follows: -

H2. *Greater perceived expertise increases the followers' trust in the branded posts of the influencers*

H2a. *Greater perceived expertise increases followers urge to buy impulsively*

Another dimension of the source credibility taken in this study is perceived similarity which is based on the shared/common attributes/characteristics., demographics, backgrounds, experience, and interests between the follower and influencer (Vonkeman, Verhagen, & Van Dolen, 2017). The similarity is the degree to which followers find a match/fit of their interest, experience, or field with the influencer (Zhang, Barnes, Zhao, & Zhang, 2018). This study focuses on the perceived similarity between a digital celebrity endorsing the brand and its followers. Moreover, perceived similarity also exerts positive influence on consumers' buying intention (Hu et al, 2019) . Accordingly, this study hypothesizes that:-

H3. *Greater perceived similarity increases the followers' trust in the branded posts of the influencers*

H3a. *Greater perceived similarity increases followers' urge to buy impulsively*

2.4.2. Content Credibility----Message

From the perspective of communication mechanism, advertisements are viewed as a process of information exchange that can bring value to the consumers. The content of the advertisement or message plays a crucial role in developing the relationship between the follower and the message communicator (Lou el al., 2019). Ducoffe (1995) argued that advertising messages lacking value can inhibit the relationship between the advertiser and consumer and may lead to negative ad evaluation. Therefore, besides the credibility of the message communication, the credibility or value of the content/message also matters (Lou et al., 2019). Content credibility is a perception of the accuracy of communication content (Appelman & Sundar, 2016). Content credibility is a tool to assess the truthfulness of a message. Lou & Yuan (2019) argued that the message's recipient does not rely solely on the source to evaluate the advertising messages. Assessment of the messages extends to the credibility of the message itself. We incorporated message credibility consisting of informational value and vicarious expressions (Shamim & Islam, 2022). The literature postulates that the informational value impacts purchase intention (Van et al., 2014). Social media influencers post regularly on specific SNSs with some informational value for their followers, motivating followers to learn about the endorsed product (Mehlman-Brightwell, 2021). Lou & Yuan (2019) found that the informational value can shape followers' responses to the brand. Sharif (2021) found that informational value in the advertising message significantly shapes consumer engagement on Twitter. Accordingly, it is postulated that:

***H4**: Greater perceived Informational value in the content of the influencer strengthens followers' trust in branded posts of the influencers*

***H4a.** Greater perceived Informational value increases followers' urge to buy impulsively.*

Besides informational value, the other variable representing the credibility of the influencers' content, as taken in this study, is the vicarious expressions (Lie et al, 2013). The vicarious expression refers to the ability of the content or message to provide a vivid experience through the stories of narratives. Vicarious expressions in the message create compassion (Deighton et al., 1989). The communication of a message through narratives or stories tends to influence the decision-making process (Li et al., 2013). It also lets viewers imagine using the product (Li et al., 2013). The message is vivid, detailed, and personal because recommendations of influencers are based on tales & real-life examples, which increase level of trust in influencers (Chen et al., 2018).

***H5:** Vicarious expressions of influencers' message is positively associated with the trust in posts of the influencers*

***H5a.** Vicarious expressions of influencers' messages positively influencer followers' urge to buy impulsively*

2.4.3. Platform Credibility---Media

Besides the credibility of source and message, media or channel credibility is crucial in influencing consumer related outcomes (Leung et al., 2022). Wathen and Burkell (2002) found that there are several variables to check the credibility of traditional media which have also been employed to examine the credibility of social media (Westerman et al., 2012). However, such criteria were mainly focused on design features or layouts, and very few studies have investigated social media platforms' credibility from users' perspectives (Li & Suh, 2015). Lou & Yuan (2019)

tested a social media advertising model that accounted for the role of source and message value and suggested examining the role of media value in future researches. In response to the call for such research, we examined the credibility of media through transparency and interactivity.

Interactivity is one of the essential components of the process of information exchange and a crucial aspect of social media platforms (Wei et al., 2015). This variable has been gaining attention from researchers (i.e., Kweon, Cho, & Kim, 2008; Quick, Funk, & Karg, 2014). Compared to traditional websites, social media platforms provide ample avenues for interaction, which helps to develop trusting relationships between users and organizations. In case of high interaction, social media users are likely to trust the information on SNSs (Djafarova & Bowes, 2020). Wei et al. (2015) highlighted that interactivity impacts users' attitudes toward the platform. Interactivity on platforms has also found to be a the reason of continuance usage of media (Zhao &Lu 2012). Studies support the essential role of interactivity in the customers' intention toward the technology. For example, Lee (2005) found that interactivity significantly impacts customers' intention to use mobile commerce. Abdullah et al. (2016) found that strong positive link between perceived interactivity and intention to revisit hotel websites.

Similarly, interactivity on websites was found to indirectly impact engagement on the SNSs (Zhang, Lu, Gupta, and Zhao, 2014). Wang et al. (2013) argue that interactivity has an important role in influencing online buying behavior. Thus, a high level of perceived interactivity feature of the social media platform could shape the followers' trust level and behavioral intentions. Thus, it is postulated that:

H6*: Perceived interactivity on the social media platforms positively impact followers' trust in the branded posts of the influencers*

H6a*: Perceived interactivity on the social media platforms positively impact consumers' urge to buy impulsively*

Perceived transparency is another essential factor of media credibility, which accounts for the willingness of individuals to disseminate information without any obstruction (Butler, 1991). Transparency comprises several components, including active disclosure (Grimmelikhuijsen &Welch, 2012). Yang and Lim (2009) proposed that medium transparency plays a key role in building relational trust. Huang (2015) found that blogs are highly credible as they are not controlled by firms and facilitate users to share content transparently. Li et al. (2015) found that transparency on Facebook pages increases the credibility of the information and behavioral intentions. Accordingly, it is postulated that:

H7*: Perceived transparency on the social media platforms will positively influence followers' trust in the branded posts of the influencers*

H7a*: Perceived transparency on social media platforms will positively influence consumers' urge to buy impulsively*

2.4.4. Trust in branded posts

Trust is the dependency on an exchange partner in whom one has confidence (Moorman et al. 1993). People feel emotions and believe the communicator (influencer) is looking out for their interests when they develop trust in them (Chen et al., 2019). Trust can impact a consumer's intention to buy a product/service (Hajli et al., 2017). Racherla et al. (2012) found that trust in online reviews and the quality of content contributed to trust. Similarly, Lee et al. (2009) found that information quality predicts trust and satisfaction significantly. Previous research studies found trust as a vital predictor of impulse buying. Chen et al. (2018) found that trust in the recommender induces an urge to buy impulsively. Accordingly, it is hypothesized that:-

H8: *Trust in branded posts of the influencers is positively associated with the urge to buy impulsively.*

2.4.4. Persuasion Knowledge

Persuasion knowledge is the beliefs held by consumers about a marketer's strategies, persuasion tactics, and effectiveness. Consumers tend to use their existing persuasion knowledge to find that the marketer/communicator is trying to encourage them to achieve their own goals (Campbell & Kirmani, 2000). Activated persuasion knowledge tends to hurt marketers' goals, i.e., brand attitudes and purchase intentions. (Matthes & Naderer, 2016). Campbell and Kirmani (2000) found that consumers rely on their persuasion knowledge when they are critical or skeptical about the motive of the marketers. Persuasion knowledge may give rise to skepticism about the intention of the marketer/brand, which may discourage purchasing. In contrast, Isaac & Grayson (2017) found that persuasion knowledge may lead to higher credibility rather than skepticism. Similarly, Martin & Strong (2016) found that when consumers trust branded messages, persuasion knowledge shall lead to a more positively evaluating of that brand. However, in inlfuencer marketing context, commercial content posted by the influencers on social networking sites is mixed with the posts of their personal lives. We included persuasion knowledge of the consumers as a covariate in our model testing. The conceptual framework highlighting hypothesized relationships is depicted in **Figure 2.**

3. Methodology:

3.1. Data Collection

Data were gathered through a self-administered online questionnaire. Data was collected from SNSs users who followed any influencer of their choice. The research team circulated the

online link of the questionnaire on Facebook, Instagram, Youtube, and Twitter, along with an email to the SNSs users. Screening questions were also incorporated into the questionnaire. Those respondents who had no SMI experience were excluded. The questionnaire took around 10 minutes to complete. The questionnaires were circulated among 380 people, out of which 320 agreed to fill the questionnaire. From the total filled-in questionnaires, 15 responses were expunged on account of not meeting the criteria imposed, resulting in a total of 305 valid responses. **Table 1** presents the demographic characteristics. The sample comprised 45.7% female and 54.3% male respondents. Most respondents (46.8%) were between 20-29 years old. Half of the respondents (65.8%) were permanently signed in on their social media accounts, Regarding the influencer categories that participants followed, roughly 50% followed fashion influencers, followed by 30% followed Food influencers, followed by 20% of participants who followed influencers who specialized in fitness, and 10% of participants followed influencers in other categories, such as technology, tourism, etc.

3.2.Procedure and Scale & Measurement Source

The interested respondents were asked to answer two screening questions about social media usage and their habits with digital influencers. We incorporated a detailed description of influencers to ensure that the participants understood the concept entirely. Those respondents who were regular social media users and had followed any digital influencers were asked to fill in the questionnaire. After the collection of filled questionnaires, we excluded the unqualified respondent.

3.3.Measurement development

The constructs of the present study were measured from developed scale of previous studies with a slight amendment regarding the social media context. This study employed 5 points Likert Scale. Four items of "urge to buy" were adopted from Wu and Lin (2017), and 7 items of "Trust"

were adopted from Parboteeah, et al. (2009). The source and number of items of all the constructs used in this study are listed in **Table 2.**

3.4.Data Analysis

To analyze the data, this study employed structural equation modeling (PLS-SEM) due to its unique advantages: (1) no requirement of normal distributions of data; (2) aiming to identify vital exogenous constructs in a research model (Hair et al., 2017); and (3) preferred quantitative data analysis method for theory development, variance explanation, and prediction objective (Hair, 2017).

4. Results

4.1.Measurement Validation

The study employed SmartPLS to run the model. Results of reliability analysis (**Table 3**) indicate that' Cronbach's alpha and composite reliability (CR) values were more than 0.70 for all latent constructs indicating that the instrument of this study is reliable. Factor loading of all items of the constructs is more than 0.7, and the AVE of all latent constructs was more than the required threshold of 0.50. **Table 4** indicates that the square root of AVE of all constructs is more significant than its correlation value with the other latent variables. **Table 5** indicates that HTMT values falling below the value of 0.90 demonstrate no discriminant validity issue in the measurement model. Thus, the measurement model meets the criteria of adequate validities, including convergent and discriminant validities.

4.2.Common method bias

We examined the VIF values to determine any potential CMB concerns between the constructs as recommended by Kock (2015). The model's greatest VIF value—2.662 (**Table 3**)—is below the 3.3 cutoff value (Kock, 2015). Consequently, we found no problems with CMB.

4.3. Structural Model

After testing that the data has no issue with reliability and validity, we tested hypotheses. The results are shown in **Table 6, w**hich shows that Hypotheses 1,2,3,4,5,6,7 which posits that the influencers' credibility components (perceived trustworthiness, perceived similarity, and perceived expertise), influencers' content credibility (informational value & vicarious expressions), and media credibility (transparency & interactivity) positively impact followers' trust in influencers' posts were found to be accepted. Our result shows that influencers' credibility components, similarity ($\beta = 0.181$, $t = 3.27$, $P = 0.001$), influencers' expertise ($\beta = 0.187$, $t = 2.919$, $P = 0.000$) and influencers' trustworthiness ($\beta = 0.193$ $t = 3.092$, $P = 0.000$) all positively affected trust in influencers' posts. Influencers' content credibility; informative value ($\beta = 0.191$, $t = 3.334$, $P = 0.000$) and vicarious expressions ($\beta = 0.164$, $t = 3.447$, $P = 0.001$) also influence trust on influencers' content positively. As regards media credibility, perceived transparency ($\beta = 0.217$, $t = 4.021$, $P = 0.001$), and perceived interactivity ($\beta = 0.245$, $t = 5.723$, $P = 0.000$) also influence trust in influencers' posts positively. As regards impact of trust on urge to buy impulsively, the H8 also stood accepted ($\beta = 0.408$, $t = 11.277$, $P = 0.001$). In addition, persuasion knowledge was not significant in affecting consumers' trust in influencers' branded posts and urge to buy impulsively ($\beta = 0.028$, $t = 1.026$, $P = 0.059$) and ($\beta = 0.033$, $t = 1.169$, $P = 0.061$). Moreover, the indirect effect of the components of influencers', messages, and media's credibility on the urge to buy impulsively was also found to be significant, and thus, H1a, H2a, H3a, H4a, H5a, H6a, and H7a are accepted. Result show that influencers' credibility components, similarity ($\beta = 0.209$, $t = 0.3458$, $P = 0.001$),

influencers' expertise (β = 0.168, t = 2.579, P = 0.000) and influencers' trustworthiness (β = 0.405 t = 8.912, P = 0.000) all positively affected urge to buy impulsively. Influencers' content credibility; informative value (β = 0.124, t = 2.605, P = 0.000) and vicarious expressions (β = 0.159, t = 3.369, P = 0.001) also influence urge to buy impulsively positively. As regards media credibility, perceived transparency (β = 0.144, t = 2.632, P = 0.001), and perceived interactivity (β = 0.107, t = 2.546, P = 0.000) also influence urge to buy impulsively positively.

5. Discussion

Social media influencer marketing has reaped significant attention from researchers, and its popularity is increasing exponentially. This research develops a mechanism that explains the role of influencers and their related factors in influencing consumer behavior through developing trust. For examining the effectiveness of influencer marketing holistically, this study has considered the role of influencers' credibility, content attributes, and media attributes. The findings of this study show that all components of influencers' credibility, contents' credibility, and media credibility positively affect trust in influencer branded posts and consumers' urge to purchase impulsively. Our research answers the study's primary question, i.e., the best combination of the source, message, and media characteristics and what matters the most among them. The research findings also add to the influencer marketing literature and implications for the research scholars who intend to study influencer marketing in the SNSs context. One significant finding concerns the role of media factors in influencing consumers' trust in branded content which is more substantial than the impact of influencers' credibility and message credibility. After media credibility, the results show that the characteristics of the message or content of the influencers' posts matter, which manifests that what is said (informational value) is equally important as how it is said (vicarious expressions). As the influencers constantly disseminate informational content through their posts on social media, it is not surprising to find that informational value contributes

significantly to strengthening trust in the influencers' branded posts and affect the consumers' urge to buy. However, the vicarious expressions of influencers' posts play a more significant role in enhancing the trust of influencers. This imply that SNS users view influencers' posts as a quality-information provider and dissemination of the information through stories or narratives that create a vivid experience for the followers, and ultimately their trust in influencers' posts is strengthen.

Another significant finding shows the effect of source credibility on trust, which is consistent with previous studies (Lou & Yuan, 2019). Results indicate that influencers' similarity, expertise, and trustworthiness positively influenced trust in influencers' branded posts. As influencers are perceived to be credible than the traditional celebrities, it is observed that the trustworthiness of influencers plays a key role in gaining followers' trust in their sponsored content. In addition, those influencers are perceived to be similar significantly affect trust in their sponsored content. Contrary to the findings of Lou & Yuan (2019), influencer expertise was also found to have a significant positive impact on followers' trust in branded content which implies that influencers, having a status of expertise among their followers, contribute to the development of followers' trust in their sponsored content.

Results also show significant findings by revisiting the trust in influencers' branded posts. Results provide practical evidence to support the notion that trust in branded posts positively affects the urge to buy impulsively, consistent with Chen et al., 2018. Moreover, our findings support the idea that influencers, messages, and media credibility help in instigating the urge to buy the product impulsively.

Lastly, this study also examined the role of persuasion knowledge of the followers. Our results provide a novel finding that persuasion knowledge does not play any role in influencing the trust in the branded posts of the influencers and urge to buy impulsively. These findings support the notion that social media influencers are so impactful in terms of their relationship built with their

followers that despite being aware that the SMIs are involved in persuasion attempts, the knowledge about such persuasion attempts neither impacts trust nor the behavioral intentions.

5.2.Theoretical Contribution

This study develops an underlying mechanism that outline the impact of influencer marketing on consumers' behavioral intentions in the social media context. It presents a comprehensive theoretical model that investigates the role of source, message, and media in influencing trust and eliciting the desire to buy. The proposed model considers the roles of influencer credibility, media credibility, message credibility, and trust; which are critical to the success of influencer marketing. Moreover, this study highlights the persuasion process of contemporary marketing practices through the multiple communication components, i.e., source, message, and media. The study fills the gap between dynamic influencer marketing practices and adds to the antecedents and consequences of trust in influencers' posts. The study also adds to the literature on social capitalization theory by postulating that influencer, message and media serve performance-yielding capabilities of influencer marketing and that the critical source of social capital is the level of Trust (Nahapiet & Ghoshal, 1998). Moreover, this study adds to the literature on persuasion theory by finding that influencers' attributes, content attributes, and platform attributes condition followers' characterizations. Such characterization activates followers' peripheral routes in the form of trust, which lead to behavioral intention.

5.3.Managerial Implications

The present study provides valuable suggestions for marketers/advertisers interested in influencer marketing. This study confirms that trust has a crucial role in translating the influencers marketing efforts into consumer behavorial intentions, which implies that marketers/advertisers should place a greater emphasis on selecting those influencers who are perceived to credible in the

eyes of their followers, their content is considered containing informational value and vicarious expressions and also that the platform used for leveraging influencers' resources are rich in respect of interactivity and transparency. Rather than relying on data describing influencers' follower counts and engagement metrics, knowledge derived from this study can help brands in implementing effective influencer marketing campaigns. Furthermore, brands looking for social media influencers with a trustworthy persona and expertise status that aligns with the marketers' offerings. Moreover, as a part of their collaborations, influencers should create informative content for their followers, and the way they communicate that informative value should be able to provide the audience with a vivid experience. This study also makes critical recommendations to influencers. They can create informative posts and signal similarities with the followers, shaping their followers' trust and maintaining their expert status.

5.4.Limitations & Future Directions

First, although the study identified an underlying mechanism for effective influencer marketing, the model was not concerning specific social media platforms. As the modality of message or influencers' content may vary from platform to platform, SNSs users may vary accordingly. Future research may test the model of this study on a specific platform. Secondly, respondents of the study were provided information about the concept of influencer marketing; however, future research should control the participants' understanding of influencer marketing. Thirdly, this study used a sample from one country, i.e., Pakistan. In the future, it will be valuable to investigate the interplay of cultural factors in different contexts. Besides source, message, and media factors investigated in present study, the future studies may look into other elements related to receivers (e.g., motivations, personality). Additionally, this study did not focus on any particular industry. The proposed model might be utilized in later studies for a particular industry. Last but

not least, future studies can use other techniques to look at causal links between variables, like experimental designs.

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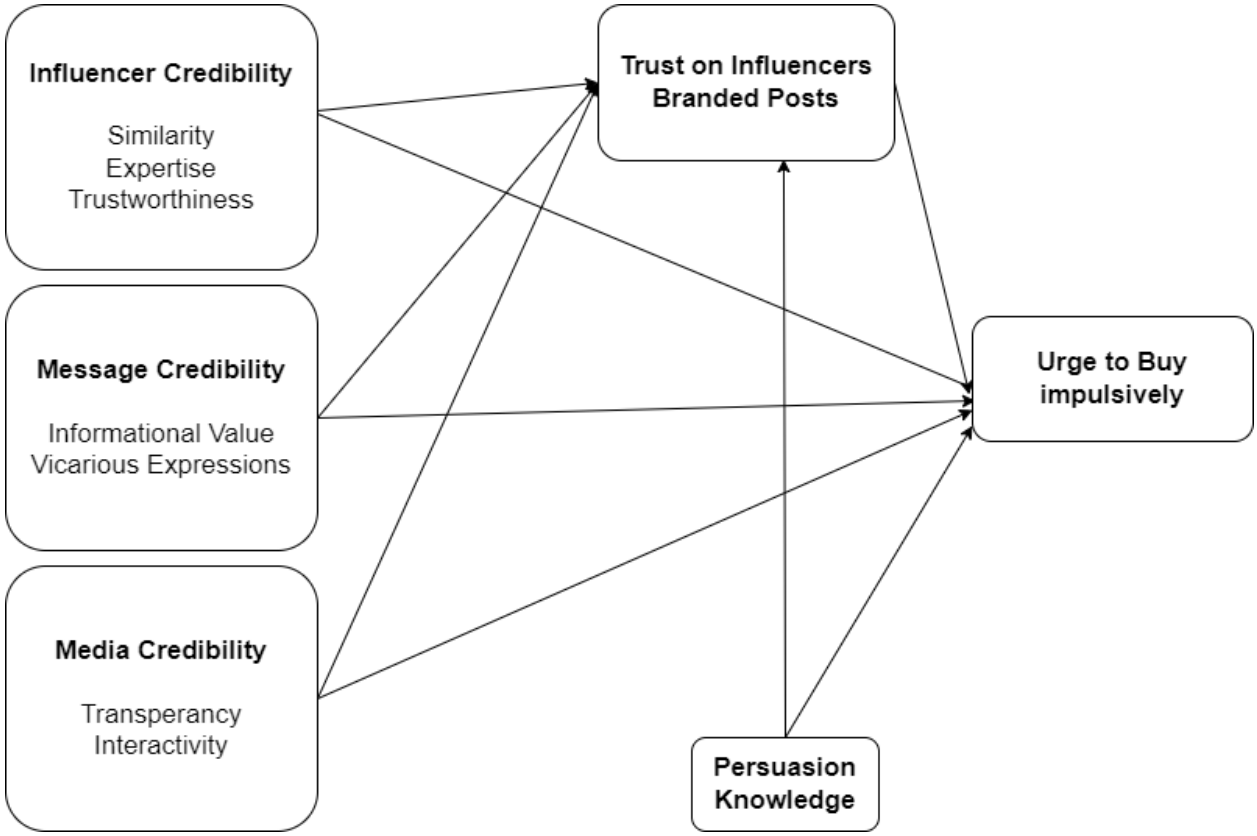

Figure 1Conceptual Framework

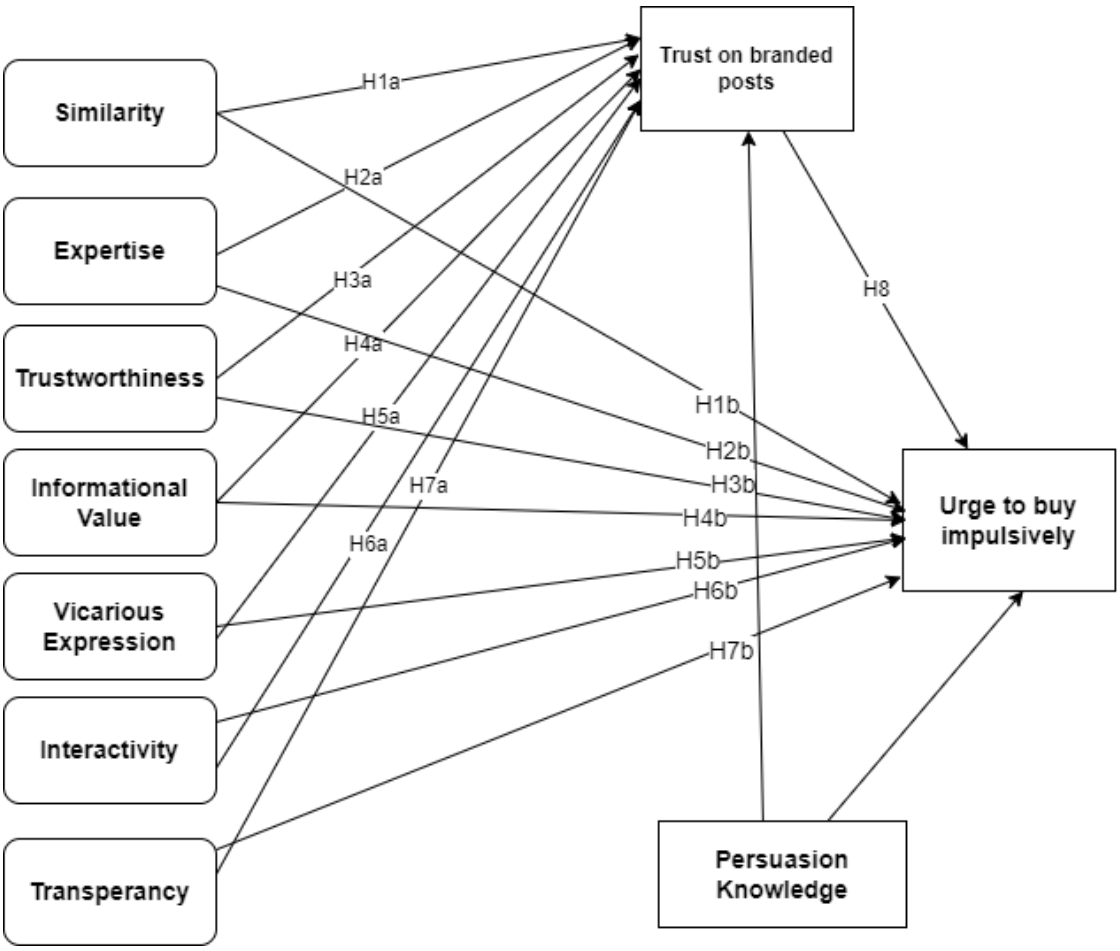

Figure 2: Conceptual framework showing hypothesized relatioships

Table 1 Respondent Demographics

Description	Elements	Response%	Description	Elements	Response%
Age	20-29	58.1%	Usage of SNSs	Facebook	51.5%
	30-39	38.6%		Instagram	25.5%
	40 or above	3.30%		Youtube	11%
				Twitter	11%
				Pinterest	3%
Gender	Male	54.3%	Type of Influencer follow	Fashion	50%
	Female	45.7%		Food	30%
				Fitness	20%
				Others	10%
Daily SNS usage	Permanently signed in	65.8%			
	6-10 times a day	18.30%			
	2-5 times a day	11.90%			

Table 2: Scale and Source of Measurement

Variable	Source	Items
Urge to buy impulsively	Parboteeah et al., (2009)	3
Trust in branded posts	Wu and Lin (2017)	7
Perceived similarity	Munnukka et al. (2016;	3
Perceived trustworthiness	Ohanian (1990).	3
Perceived expertise	Ohanian (1990)	4
Informational value	(Voss, Spangenberg, and Grohmann 2003)	5
Vicarious expressions	Li et al. (2013)	3
Perceived interactivity	(Scoble & Israel, 2006)	4
Perceived transparency	Li, R., & Suh, A. (2015)	3
Persuasion knowledge	Vashisht & Royne, 2016	4

Table 3:Measurement model and Collinearity Statistics

Constructs	Items	Loadings	VIF	AVE	CR	Cronbach's
Trustworthiness	Tr1	0.947	1.788	0.871	0.964	0.951
	Tr2	0.935	1.807			
	Tr3	0.939	1.194			
Expertise	Exp1	0.902	1.051	0.790	0.938	0.912
	Exp2	0.881	1.891			
	Exp3	0.867	1.972			
	Exp4	0.901	1.899			
Similarity	Sim1	0.937	1.917	0.847	0.943	0.910
	Sim2	0.912	1.819			
	Sim3	0.922	2.153			
Informational value	Inf1	0.795	2.207	0.684	0.915	0.884
	Inf2	0.823	2.114			
	Inf3	0.856	1.869			
	Inf4	0.776	2.364			
	Inf5	0.846	1.336			
Vicarious Expression	VE1	0.842	1.619	0.852	0.945	0.913
	VE2	0.868	1.987			
	VE3	0.850	1.566			
Interactivity	Int1	0.785	1.455	0.631	0.872	0.806
	Int2	0.857	1.442			
	Int3	0.806	1.657			
	Int4	0.723	1.223			
Transparency	Trans1	0.877	1.519	0.706	0.877	0.787
	Trans2	0.898	2.125			
	Trans3	0.737	1.997			
Trust	Trust1	0.863	2.551	0.699	0.934	0.916
	Trust2	0.854	2.662			
	Trust3	0.876	2.153			
	Trust4	0.780	2.068			
	Trust5	0.872	2.301			
	Trust6	0.761	2.111			
	Trust7	0.802	2.114			
Urge to buy	UTB1	0.899	2.456	0.862	0.962	0.947
	UTB2	0.926	2.221			
	UTB3	0.951	2.011			
Persuasion knowledge	PK1	0.845	1.336	0.765	0.951	0.938
	PK2	0.939	1.168			
	PK3	0.921	1.434			
	PK4	0.837	1.566			

Table 4: Fornell Larcker Method

	1	2	3	4	5	6	7	8	9	10
Similarity	**0.919**									
Expertise	0.380	**0.889**								
Trustworthiness	0.644	0.411	**0.895**							
Vicarious expressions	0.391	0.324	0.378	**0.832**						
Informational value	0.356	0.196	0.348	0.549	**0.889**					
Transparency	0.451	0.229	0.309	0.610	0.587	**0.827**				
Interactivity	0.518	0.339	0.408	0.517	0.486	0.566	**0.870**			
Trust	0.365	0.198	0.289	0.467	0.480	0.542	0.579	**0.920**		
Urge to buy Imp	0.635	0.279	0.404	0.465	0.434	0.530	0.506	0.458	**0.858**	
Persuasion knowledge	0.311	0.167	0.256	0.551	0.713	0.620	0.522	0.561	0.510	**0.933**

Table 5: HTMT Ratio

		1	2	3	4	5	6	7	8	9	10
1	**Similarity**										
2	**Expertise**	0.52									
3	**Trustworthiness**	0.299	0.717								
4	**Vicarious expressions**	0.193	0.125	0.093							
5	**Informational value**	0.628	0.53	0.265	0.214						
6	**Transparency**	0.611	0.648	0.479	0.221	0.758					
7	**Interactivity**	0.756	0.498	0.25	0.289	0.796	0.732				
8	**Trust**	0.052	0.133	0.06	0.155	0.115	0.108	0.204			
9	**Urge to buy Imp**	0.387	0.581	0.766	0.419	0.421	0.615	0.427	0.204		
10	**Persuasion knowledge**	0.337	0.419	0.591	0.413	0.42	0.586	0.424	0.224	0.423	

Table 6: Structural Path Estimates

	Path estimates	Standard error	T Stats
Similarity → Trust in branded post	0.181	0.555	3.272
Expertise → Trust in branded post	0.187	0.522	2.919
Trustworthiness → Trust in branded post	0.193	0.062	3.092
Informational value → Trust in branded post	0.191	0.056	3.334
Vicarious expression → Trust in branded post	0.164	0.048	3.447
Interactivity → Trust in branded post	0.245	0.043	5.723
Transparency → Trust in branded post	0.217	0.054	4.021
Trust on influencers → Trust in branded post	0.408	0.306	11.277
Persuasion knowledge → Trust in branded post	0.028	0.028	1.026
Persuasion knowledge → Trust in branded post	0.033	0.028	1.169
Similarity → urge to buy impulsively	0.209	0.061	3.458
Expertise → urge to buy impulsively	0.168	0.065	2.579
Trustworthiness → urge to buy impulsively	0.405	0.045	8.912
Informational value → urge to buy impulsively	0.124	0.048	2.605
Vicarious expression → urge to buy impulsively	0.159	0.047	3.369
Interactivity → urge to buy impulsively	0.144	0.055	2.632
Transparency → urge to buy impulsively	0.107	0.042	2.546

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State as a Path Breaker? Path-dependent Behaviors and Firm Innovation: The Moderating Role of Institutional Forces

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State as a path breaker? Path-dependent behaviors and firm innovation: The moderating role of institutional forces

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Abstract

Centering on the proposition of "how China's unique institutional context helps firms achieve innovation breakthroughs," we explore the effects and mechanisms of institutional forces on the relationship between firm-level path-dependent behaviors and innovation performance from an integrated framework of path dependence and institutional view. We first examine the effects of path-dependent behaviors, manifested as product line retention and extension (which we term as "path-dependent product line behaviors"), on both incremental and radical innovation performance. In investigating this relationship, we join the institution-based view and propose that the effects of path-dependent product line behaviors are contingent on institutional forces. We particularly distinguish forces exerted by political and economic institutions because they bear different expectations and pressures. Using the samples of Chinese listed pharmaceutical enterprises in the period of 2010-2016, we reveal that path-dependent product line behaviors are conducive to incremental innovation but detrimental to radical innovation. More importantly, while economic institutional forces can enhance the effects of these practices on both two types of innovation, political institutional forces can weaken their adverse effects on radical innovation.

Keywords: Path-dependent Behaviors, Institution-based View, Product Line Strategy, Radical Innovation, Incremental Innovation

1. Introduction

How Chinese firms rise to build competitive advantages and achieve technological breakthroughs at a global scale has aroused extensive discussions in scholarly communities in recent years (Genin et al., 2021; Chesbrough et al., 2021; Lazzarini et al., 2021; Ramamurti and Hillemann, 2018; Lazzarini, 2015; Meyer et al., 2009). In general wisdom, the low-quality institutional environment in China is deemed a "liability" for technological catch-up at firm level. To survive or even prosper in such an environment, Chinese firms must divert additional resources to pursue some unconventional strategies such as political integration and intellectual plagiarism, which are discredited by traditional theories. Obviously, however, according to both empirical and anecdotal evidence, this judgement is far from the truth; the irreplaceable role of China's institutional context in the success of domestic firms is increasingly revealed by recent studies, and scholars realize that the institutional environment in China is not a burdensome "liability" but a valuable "asset" instead (Bai et al., 2021; Wei et al., 2020; Bruton et al., 2019; Bhaumik et al., 2015, if used properly, it could bring country-specific advantages that favor indigenous innovation (Bhaumik et al., 2015). However, an adequate discussion has not yet emerged on how exactly institutions and the governments behind them help firms achieve innovation breakthroughs.

Moreover, after briefly reviewing the literature on the technological catch-up of Chinese firms, we find that among all the perspectives and theories employed by extant studies, the path dependence perspective is surprisingly absent. In fact, the path dependence perspective not only can shed light on how already-advantageous incumbents sustain and expand their first-mover advantages (Dobusch and Schüßler, 2013; Pierson, 2000; Lieberman and Montgomery, 1988), it can also provide insights into how latecomers succeed in achieving technological catch-up in a dynamic environment (Eggers and park, 2018; Fuentelsaz et al., 2015). Although path dependence as a perspective has been ignored by scholars who are currently committed to the "Chinese miracle," we find it highly in line with the actual practices in China. For example, the fast development of China's digital economy is largely attributed to the "assets of lateness:" Considering that China was late to industrialize, Chinese firms had not overinvested in traditional infrastructure and technologies such as credit card payment facilities; when the digital economy emerges as a more efficient form of economy, firms can rapidly

switch to a new technological trajectory without much burden and achieve product innovation, especially when the governments have imposed strategic requirements and incentive policies on firm's digital transformation (Ramamurti and Hillemann, 2018). Similar phenomena also exist in China's telecommunication and high-speed railway industries. Considering that firms in some developed economies continue to deploy 4G business and operate traditional railroad facilities to recoup prior investments, Chinese firms such as Huawei and CRRC (the largest manufacturer of rail transport in China), have broken the original paths and made major achievements in 5G and high-speed railway technologies, respectively, under the call and institutional support of the government (Chesbrough et al., 2021; Chen et al., 2021). From the above cases, we can derive at least two implications. First, the rise of Chinese firms in terms of innovation capability can be partly explained by traditional path dependence theory, as firm innovation performance is profoundly affected by path-dependent behaviors. Second, institutional forces play an important role in the process of path-dependent behaviors affecting firm innovation performance.

Therefore, unfolding around the proposition of "how China's unique institutional context helps firms achieve innovation breakthroughs," we explore the bearings of institutional forces on the relationship between firm-level path-dependent behaviors and innovation performance from an integrated framework of path dependence and institution-based view. Path-dependent behaviors refer to a set of actions characterized by fully exploiting existing competences and persistently consolidating established ways of doing things (Karim and Mitchel, 2000). Their effects on performance have been discussed extensively in a kaleidoscope of processes from business management (Sabidussi et al., 2018; Rerup and Feldman, 2011; Karim and Mitchel, 2000) to public administration (Jiang et al., 2021; Parker and Hine, 2015). While previous research has comprehensively shed light on the origins, mechanisms, and consequences of path-dependent behaviors, to our knowledge, it has left two lacunae waiting to be filled. First, the relationship between path-dependent behaviors and innovation has not been fully discussed; scholars tacitly believe that these kinds of behaviors do harm to firm innovation, especially in highly dynamic environments (Eggers and Park, 2018). In fact, just as incumbents of high path dependence are often deemed as more innovative (Fuentelsaz et al., 2015), the relationship between path-dependent behaviors and

innovation should not be straightforwardly linear. Second, as institutions are deeply shaped by path-dependent behaviors, how institutions in turn affect path-dependent behaviors and their relationship with innovation remains poorly investigated. In particular, as North (1990) once proposed that the change of path dependence was the result of exogenous forces exerted by the institutions, especially the political institutions, he left space on the exact mechanisms underlying the process for subsequent scholars.

Accordingly, to bridge the above lacunae and thus respond to our research proposition, we further derive two research questions that are logically progressive, namely, "what is the exact relationship between path-dependent behaviors and firm innovation" and "how institutional forces moderate this relationship." We use product line retention and extension to denote path-dependent behaviors for their more intimate relationship with innovation (Karim and Mitchel, 2000). Then, we decompose innovation performance into incremental and radical types by proposing that the effects of path-dependent behaviors on innovation are contingent on technological discontinuity. We also distinguish forces exerted by political and economic institutions because they bear different expectations and work on contrasted mechanisms. Lastly, we explore how these two types of institutional forces respectively moderate the relationships between path-dependent behaviors and innovation performance. To our very knowledge, this study is the first attempt to provide a lens of institutional contingency on this topic.

2. Literature review and theoretical framework

2.1 Typical path-dependent behaviors: Product line retention and extension

Product line strategy generally involves the retention, extension, addition, and deletion of product lines. Among them, product line addition and deletion often catch scholars' eyes; these actions are regarded as major manifestations of dynamic capabilities and are frequently discussed in diversification and divestiture literature (Yu et al., 2016; Zahavi and Lavie, 2013; Karim and Mitchel, 2000). Studies have shown that well-timed reconfiguration of product line portfolios is conducive to customer loyalty, market share, profitability, and survival rate, among others (Jeong et al., 2017; Barroso and Giarratana, 2013; Giarratana and Fosfuri, 2007). In comparison, the retention and extension of existing product lines remain understudied, including their effects on innovation.

We follow previous scholars by defining product line retention as keeping current product line portfolios instead of scrapping them and product line extension as adding model variants of existing products (Karim and Mitchel, 2000). These two types of actions are well recognized as typical path-dependent behaviors, given their shared path-dependent logic (Karim and Mitchel, 2000). Specifically, compared with addition and deletion strategies, product line retention and extension emphasize the full use of existing resources and capabilities and are essentially determined by what business firms have long been operating (Jeong et al., 2017; Giachetti and Dagnino, 2014; Karim and Mitchel, 2000). As product lines are deeply ingrained in organizational routines and processes, practices carried out on them have constantly been described as major strategic responses to market competition (Jeong et al., 2017) and deemed essential to help build competitive advantages (Giachetti and Dagnino, 2014; Zahavi and Lavie, 2013). In particular, whereas competitive advantages are deemed fleeting, especially in environments of high velocity, those brought by product line retention and extension are often sustained owing to the characteristics of social complexity and unique historical path inherited in accumulated product line portfolios (Zahavi and Lavie, 2013; Karim and Mitchel, 2000; Barney, 1991).

2.2 Effects of path-dependent behaviors on firm performance: Two core mechanisms

The paramount importance of path-dependent behaviors on firm performance can be seen from the classical saying, “One’s current position is shaped by the path it has traveled” (Teece et al., 1997). Although numerous studies have been conducted on how path-dependent behaviors affect firm performance, the results are often mixed and open to dispute. Some scholars regard path-dependent behaviors as a magic weapon for incumbents to give full play to first-mover advantages (Liberman and Montgomery, 1988, 1998), whereas others claim that continuous path-dependent behaviors would inevitably lead to problems such as structural inertia and cognitive rigidity that are detrimental to firm innovation (Vecchiato, 2020; Vergne and Durand, 2010). We argue that the divide can be attributed to two core mechanisms underlying path-dependent behaviors, which have the opposite effects (Dobusch and Schüßler, 2013; Vergne and Durand, 2010).

Positive incentive mechanisms. Contrary to what common sense of economics would suggest, continuously reinvesting on the same resource or technology will bring about the effect of increasing

returns instead (Pierson, 2000; Teece et al., 1997; Arthur, 1994), typically due to four mechanisms: scale economies, network effects, learning effects, and adaptive expectations (Dobusch and Schüßler, 2013; Teece et al., 1997; Arthur, 1994). Among them, network effects arise when the value of a product increases along with an increase in the number of other end users of the same product (direct network effect) or in that of product providers (indirect network effect, Katz and Shapiro, 1986); adaptive expectations predict that everyone aspires to be a "prophet" and "bet on the right horse." These mechanisms lead to products with the largest installed base being more likely to be chosen (Rietveld and Schilling, 2020; Pierson, 2000). Given that these micro-mechanisms explain most of the positive effects of path-dependent behaviors on performance and function by attracting firms to existing paths with extra benefits, we summarized them as "positive incentive mechanisms".

Negative inhibition mechanisms. Apart from the mechanisms laying emphasis on positive incentivizing, another set of mechanisms that impede one from scrapping existing tracks also notably exist. Among them, prior commitments stand out in the forms of initial investments, switching costs, and managerial endeavors, among others. As a rational economic agent, a firm is encouraged to recoup prior investments. The more it invests initially, the more reinvestment it has to make to cover the large set-up costs (Lieberman and Montgomery, 1988). Also, as time elapses, switching costs will increase as a firm gradually adapts to the characteristics of products, technologies, and raw materials it uses (Pierson, 2000; Lieberman and Montgomery, 1988). All these prior commitments make firms reluctant to halfway scrap or devalue existing investments, even if they realized the very necessity (Eggers and Park, 2018; Lieberman and Montgomery, 1988). These mechanisms account for most of the downsides of path-dependent behaviors and function by producing the lock-in effects. We therefore summarize them as "negative inhibition mechanisms."

Consequently, we built a framework of mechanisms of path-dependent behaviors on firm performance (see Figure 1), which lays the basis for our hypothetical deduction.

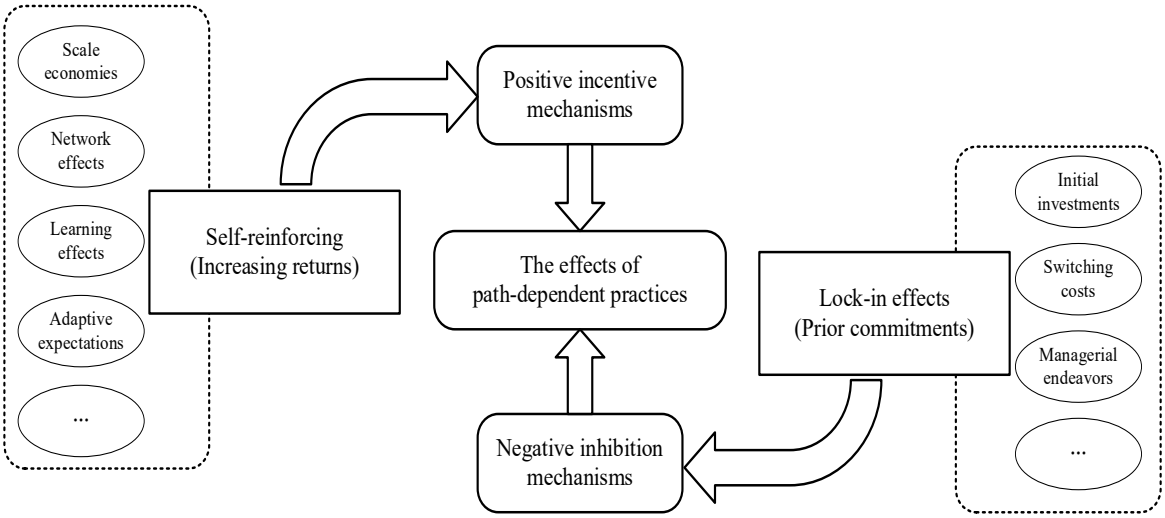

Figure 1. A framework of mechanisms of path-dependent behaviors

2.3 Institutional context

Figuratively compared to a third leg of the strategy tripod, institution as a view has been increasingly observed to be employed in solving a kaleidoscope of strategic issues (Peng et al., 2009). In this study, we propose that the institutions define the boundary conditions of how path-dependent product line behaviors influence innovation performance. Specifically, we follow North (1990) in decomposing institutional forces into those exerted by economic institutions and those by political institutions. Economic institutions are defined as those that support the functioning of market mechanisms and principles (Meyer et al., 2009; North, 1990). Property rights protection, financial and investor intermediaries, and the proportion of resources allocated through the market are typical indicators that reflect how economic activities are governed by the invisible hand (Meyer et al., 2009; North, 1990). Political institutions refer to the rules that "define the hierarchical structure of the polity, its basic decision structure, and the explicit characteristics of agenda control" (North, 1990). Taking the compulsive execution of political power as a guarantee, governments regulate economic and social activities through policy instruments (Bai et al., 2021; Lazzarini et al., 2021; Wang et al., 2012). In practice, the mechanisms of economic and political institutions to exert forces on firms are quite different. For economic institutions, their forces on firms are usually region-specific, because firms in the same region are subjected to a common set of rules and principles and are thus influenced by economic forces nearly to the same extent. In other words, economic institutions emphasize the

protection of the rights and interests of all market entities and follow a principle of neutrality. By contrast, the influence of political institutions is often firm-specific, and different firms have different perceptions of pressures from the government. This phenomenon exists because the focal actor - governments wield their power selectively on the basis of the nature and attributes of potential targets (Genin et al., 2021; Bai et al., 2021; Wang et al., 2012). For example, SOEs are generally believed to be more susceptible to political constraints (Wei et al., 2020; Ramamurti and Hillemann, 2018; Lazzarini, 2015); to cultivate and attract industry leaders, local governments in China have long implemented an "one rule for one firm" policy and granted some firms with certain privileges. Therefore, we construct the variable of economic forces at regional level and that of political forces at firm level.

3. Hypotheses

3.1 Path-dependent product line behaviors and radical innovation

In this paper, we take product line retention and extension as an operational measure of path-dependent behaviors. In practice, firms tend to build and operate their product line portfolios on the bases of their existing business; they often retain only a few types of products that are expected to bring competitive advantages and continuously develop new model variants of these products to consolidate and expand market share (Karim and Mitchel, 2000). In this process, complementary resources, organizational routines, and technological competences specific to current product line portfolios are accumulated and help firms maximize extant market demand (Fuentelsaz et al., 2015). Moreover, during the process of building a well-entrenched product line portfolio, a deeply ingrained cognitive system comprising knowledge structure, strategic assumptions, and information filters is established, which directs a firm's daily operation and strategic activities and improves decision-making efficiency through heuristic rules (Vecchiato, 2020).

Radical innovation of high technological discontinuity entails new organizational capability that goes beyond the current path or at least a substantial reconfiguration of existing resources and capabilities (Gerstner et al., 2013). It also requires firm managers to update and reframe their strategic assumptions and cognitive structure for new technological routes. Therefore, in a highly dynamic environment where radical innovation wins, specialized complementary resources, organizational

capabilities, and cognitive schemata produced by constant reinvestment on existing product line portfolios will be drastically devalued or even utterly nullified when technological discontinuity is too high (Alkarsig et al., 2018). In such context, the "negative inhibition mechanisms" identified above can be said to play a dominate role, as firms are locked on a current path due to previous investment made on product line building and insufficient motives as well as ability to update these strategic assets that once bring competitive advantages. In this regard, at least in environment of high velocity, stubbornly retaining and extending current product lines is detrimental to seizing fleeting entrepreneurial opportunities, identifying latent market demand, and switching to novel technological trajectories of higher value potentials (Jeong et al., 2017; Giachetti and Dagnino, 2014). As such, we propose the following:

Hypothesis 1: Path-dependent product line behaviors are negatively related to radical innovation performance, such that the more product lines a firm retains and extends, the less radical innovations will be achieved.

3.2 Path-dependent product line behaviors and incremental innovation

We propose that in terms of the technological trajectories in which firms have already been situated, path-dependent behaviors may exert an opposite influence on innovation and largely promote technological advances. First, focusing on current product line portfolios to carry out business can help trigger the network effects by accumulating installed bases and distribution channels within a given market range (Alkarsig et al., 2018). Such action forms an incumbent advantage, enabling firms to direct the evolutionary path of technological paradigms and the dominant design of industry standards, which can further ensure the continuity of technological achievements (Liberman and Montgomery, 1998). Second, path-dependent product line behaviors can also help firms maximize the learning effects and lead to a higher possibility of winning R&D races within extant technological domains (Giarratana and Fosfuri, 2007). By continuously reinvesting on current product line portfolios and the underlying technical architecture, firms will gradually develop the so-called, "patent thickets," which can secure their freedom to operate in R&D and facilitate the accumulation of resources and

capabilities by limiting opponents' technological space (Grimpe and Hussinger, 2014). Lastly, deepening extant product lines also results in more complementary assets and specialized innovation processes being accumulated, which have been found to play a vital role in generating incremental innovations (Sabidussi et al., 2018; Fuentelsaz et al., 2015; Grimpe and Hussinger, 2014). Thus we propose the following:

Hypothesis 2: Path-dependent product line behaviors are positively related to incremental innovation performance, such that the more product lines a firm retains and extends, the more incremental innovations will be achieved.

3.3 Moderating role of the institutional forces

Economic institutional forces. In general, we conjecture that economic institutional forces can simultaneously magnify the "positive incentive mechanisms" and "negative inhibition mechanisms" identified above by promoting firms to "profit from innovation" and stimulating them to employ efficiency logic as the dominant institutional logic.

First, a highly marketized environment can release the full potential of the positive incentive mechanisms we identify. On the one hand, strong economic institutions inevitably bring less uncertainty (Fuentelsaz et al., 2015), thus enabling both firms and users to ex ante predict and identify the would-be dominant product ecology and relevant technological paths with accuracy and timeliness. According to adaptive expectations, technologies and products that have already acquired a huge installed base are regarded as the result of rational choice by the market and will be pursued by latecomers. Thus, a dominant position is earned for firms owning these technologies and products, and the so-called "self-fulfilling prophecy" occurs (Pierson, 2000). Therefore, in an institutional environment where economic power plays a major role, the incumbent advantage developed through constant reinvestment on existing product line portfolios will be further consolidated by virtue of stronger adaptive expectation effects (Rietveld and Schilling, 2020; Pierson, 2000). On the other hand, strong economic forces also guarantee a firm's rights and space to profit from innovations produced by constant investments (North, 1990; Teece, 1986). In particular, if no appropriability regime imposes

sufficient constraints on opportunistic acts, the rents generated from the "positive incentive mechanisms" will be misappropriated in market exchange and eventually dissipated to zero (Teece, 1986). By contrast, when property rights are well-protected, firms can earn as much rents as possible from these "positive incentive mechanisms," and their competitors will experience difficulty inventing around incumbents' entrenched product line portfolios (Grimpe and Hussinger, 2014). Consequently, the positive effects of product line retention and extension on incremental innovation are amplified.

Second, in an environment with powerful economic forces, firms tend to employ efficiency logic as the dominant institutional logic for profit-seeking purposes defined by the very nature of economic entities (Zhou et al., 2017). Adopting this logic, firm managers will set their prime task to maximize shareholders' wealth. To achieve this goal of highest priority, they will look at rates of return in every product line project and attempt to assure that the major investment decisions they made are legitimate and reasonable; any act of scrapping prior commitments will be regarded as a signal that the principle of efficiency is violated (Pache and Santos, 2013). Once efficiency logic becomes dominant, firms will be locked into current product line portfolios by attaching more value to previous commitments. To recoup prior investment and prove that the past decisions are in line with the efficiency logic, they will not abandon already established product line portfolios, even if a more efficient technological trajectory emerges. We thus infer that when economic institutional forces are strong, firms' incentives to recoup losses, rationalize past decisions, and keep the value of current product lines are prominently strengthened, thereby enhancing the "negative inhibition mechanisms." Thus, we propose the following:

Hypothesis 3a: The effect of path-dependent product line behaviors on radical innovation performance is more negative when economic institutional forces at regional level are stronger.

Hypothesis 3b: The effect of path-dependent product line behaviors on incremental innovation performance is more positive when economic institutional forces at regional level are stronger.

Political institutional forces. By contrast, we submit that the forces exerted by political

institutions can reduce the "negative inhibition mechanisms" by driving firms to adopt legitimacy logic as the dominant institutional logic and providing resource incentive and compensatory policies.

First, in a market where the political power matters more, legitimacy takes the seat once owned by efficiency and becomes the dominant institutional logic when a firm makes strategic and operational decisions (Scott, 1995). Firms, especially those closely tied to governments, SOEs for example, no longer take the maximization of short-term efficiency as the only or even primary goal. Instead, they come under pressure to respond and conform to various institutional constraints to gain legitimacy which is indispensable to their survival in a longer time scale (Zhang and Greve, 2018; Zhou et al., 2017; Wang et al., 2012). In some regions or sectors where the government intervention is too powerful to be neglected, the legitimacy obtained by adapting to institutional pressures may even set the upper limit of firms' capacity to absorb resources and extend networks (Inoue et al., 2013; Wang et al., 2012). As it is said, to be intimately affiliated with powerful governments to acquire resources or even privilege, a price must be paid (Genin et al., 2021; Zhang and Greve, 2018). In this regard, when governments value technological innovation as a national priority, as they usually do, firms are motivated or even required to cater to this need by producing new products and adopting new technologies, even including those that are so radical and disjointed and incompatible with current resource and capability system built on old product line configuration (Genin et al., 2021; Li et al., 2018). In reality, firms closely affiliated with governments such as SOEs actually behave as such. They look ahead and afar when making strategies and selecting technological paths instead of fixing their eyes on current investment and resource configuration (Inoue et al., 2013). Under the influence of political institutional forces, these firms put national will before economic interests and respond to the slogan of "race to conquer the technological highland" made by governments to receive favors from these powerful organizations by faithfully following their instructions (Zhang and Greve, 2018). This phenomenon is illustrated by the cases of high-speed railway and telecommunication industry mentioned at the beginning (Chesbrough et al., 2021; Chen et al., 2021). In this context, the "negative inhibition mechanisms" manifested in the prior commitments and lock-in effects are drastically reduced, because firms that adopt legitimacy logic no longer maximize the efficiency in every major investment, nor can they "bargain" in the face of institutional pressures. Therefore, led by political

institutional forces, firms have to invest in new technological paths, even if they have invested a lot of resources on current product line portfolios. They treasure their status and connections to the governments far more than pure efficiency indicated by project profitability.

Second, the political forces can weaken the "negative inhibition mechanisms" not only with the weapon of legitimacy pressure but also by providing economic incentives and compensatory policies. As mentioned before, firms are gravitated to current technological routes because they lack motives and capabilities to introduce radical innovation paradigms; doing so will violate the principle of efficiency and devalue prior investments (Eggers and Park, 2018; Lieberman and Montgomery, 1988). However, in an institutional context characterized by a strong government leading the direction of industrial development, a huge amount of valuable resources including lands and funds are available as stimuli for firms that follow the calls of central governments (Inoue et al., 2013; Wang et al., 2012). For example, in the name of building a holistic innovation ecosystem, funds provided by governments at various levels are injected into firms' R&D operation through the policy channels (Chen et al., 2021; Zhou et al., 2017). Wei et al. (2020) coined the "institution-led market" to depict a phenomenon in which Chinese governments intentionally create a well-timed market by targeting on certain emerging fields (e.g., 5G and new energy vehicles) and via means including public procurement, R&D subsidies, tax reliefs, and R&D resource docking, thus alluring firms, whether owned by the state or not, to invest in these new domains. In sum, we argue that by acquiring a huge amount of resources from governments, firms' previous investments made on extant product line portfolios are largely reimbursed, which renders the "negative inhibition mechanisms" ineffective.

Moreover, apart from restraining "negative inhibition mechanisms", political forces can also somewhat restrain "positive incentive mechanisms". This scenario happens because in governing market exchange, the "visible hand" of the government will replace the market principles with political will and thus bind the "invisible hand" of the market (Rietveld and Schilling, 2020). Therefore, the benefits of path-dependent behaviors to incremental innovation brought by stronger economic institutions are dissipated when non-market forces matter more. Thus, we propose the following:

Hypothesis 4a: The effect of path-dependent product line behaviors on radical innovation performance is less negative when political institutional forces at firm level are higher.

Hypothesis 4b: The effect of path-dependent product line behaviors on incremental innovation performance is less positive when political institutional forces at firm level are higher.

We illustrate all hypotheses in our conceptual model in Figure 2.

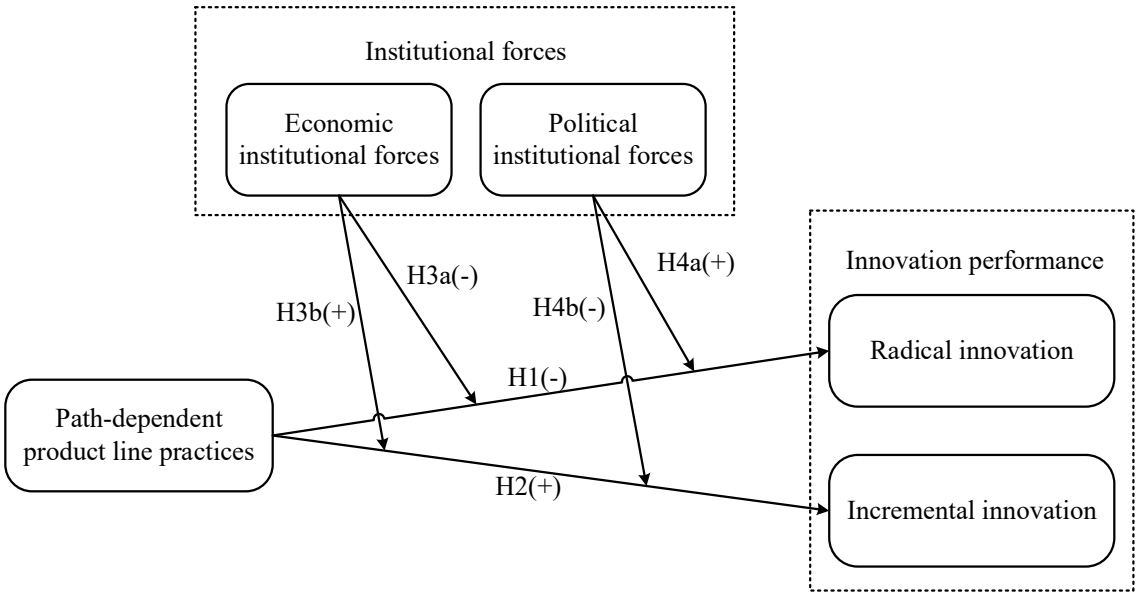

Figure 2. Conceptual model

4. Methodology

4.1 Research setting and data collection

China was initially regarded as an "emerging economy" or "transition economy" together with Brazil, India, and other countries. Until recently, academia started using "aspirant economy" to embody China's economic and political power which is not inferior to developed countries (Genin et al., 2021; Bruton et al., 2021). The change in the use of label symbolizes that at least for some scholars, the fundamental transformation of institutions that China has been undergoing in the past decades (e.g., Reform and Opening-up policy at national level, SOE restructuration at firm level) has brought this nation to a hybrid state where the two forces of economy and politics tightly intertwine. On the one hand, by breaking the institutional barriers left over from the planned economy period that obstruct the flow of resources and stripping many non-core but still valuable resources out of the public system,

China has basically handed over the economy back to the principles of market forces. On the other hand, Chinese governments, even in the transitional period, still wield enormous power on economic development by holding colossal SOEs as their market agents and using policy instruments to allocate core resources. The development of institutions in China is also highly uneven, as firms located in different provinces are largely shaped by local institutional forces (Wei et al., 2020; Li et al., 2018). Therefore, China, as a single research setting, has provided us with several variances in institutional forces for empirical tests on the hypotheses we developed (Wei et al., 2020).

We further limit our research sample to one industry in China because firms from different industries differ vastly not only in product line strategies and practices but also in the innovation cycle, paradigm, and performance. A substantial divergence of criteria also exists on what exactly defines incremental and radical innovation among different industries. Therefore, making cross-sector comparisons is neither feasible nor reasonable. In particular, we choose Chinese pharmaceutical enterprises which are listed on the Shanghai Stock Exchange and Shenzhen Stock Exchange to build our sample for three concerns. First, innovation is a necessary condition for firms in pharmaceutical industry to build and sustain competitive advantages, and pharmaceutical firms need to allocate a vast amount of resources to carry out R&D activities and are thus often selected as samples in many innovation studies (Yu et al., 2016; Gerstner et al., 2013; Karim and Mitchell, 2000). Second, owing to the technological characteristics and administrative regulation, the innovation cycle in the pharmaceutical industry are notoriously long. The process usually takes around ten years from new drug synthesis to market release. Hence, the potential endogeneity problem between path-dependent product line behaviors and innovation performance is substantially reduced. Third, compared with studies embedded in developed economies that can easily and reliably obtain data on product lines, we can scarcely garner credible information about product lines given that relevant databases lag far behind in China. Under this circumstance, the pharmaceutical industry stands out again by virtue of a relatively sound database system operated by the Nation Medical Products Administration for the sake of public life safety.

We constructed our temporal window between 2010 and 2016 to match the latest publication of the marketization index at provincial level complied by the National Economic Research Institute

(NERI), which served as the only reliable source that provided quantitative measurement of the economic institutional forces in China and were widely employed by Chinese scholars (Zhou et al., 2017). To build a balanced panel, we excluded firms delisted or tagged as "ST" during the window period and obtained a longitudinal dataset of 128 Chinese publicly listed pharmaceutical firms from 2010 to 2016.

4.2 Variable measurement

4.2.1 Dependent variable

Radical and incremental innovation performance

We followed previous studies that used patent data instead of product data to measure radical as well as incremental innovation performance in a bid to prevent any endogeneity problems. Specifically, by their very definition, radical innovations usually spin off brand new technological trajectories composed of a distinct set of scientific and design principles, and this property makes them much more cited than incremental innovations (Wu et al., 2019; Delgado-Verde et al., 2016; Dahlin and Behrens, 2005). Accordingly, an increasing number of scholars started adopting patent forward citations to distinguish between these two kinds of innovation (Wu et al., 2019; Dahlin and Behrens, 2005). Specifically, we follow Wu et al. (2019) by defining those having the top 3% of forward citations as radical innovation patents, whereas patents having citation numbers below the threshold value were classified as incremental innovation patents.

Raw patent data of our sample firms during the window period were obtained from the incoPat database (https://www.incopat.com/), a Chinese patent database which is increasingly used by studies grounded in China (Wei et al., 2020). We aggregated the data year by year, labeled those ranked top 3% as radical innovation patents; otherwise, incremental innovation patents. Then, we calculated the values of radical and incremental innovation performance by separately counting the numbers of two kinds of patents per firm on a yearly basis.

4.2.2 Independent and moderating variable

Path-dependent product line behaviors (PD)

Given that, in this study, product line retention and extension are set to operationalize path-dependent behaviors instead of product performance, we find a database provided by the Nation Medical

Products Administration (NMPA) highly valuable as it includes complete records of domestic drug production. As stipulated by the law, all pharmaceutical firms that wish to launch products on China's market must register at the NMPA by providing detailed information about their drugs. The registration is only valid for five years, and if a firm plans to continue operating the drugs after expiration, it has to make a renewed filing (i.e., product line retention). Firms are also required to update the information every time they make adjustments to dosage, packaging, formula, and so on (i.e., product line extension). All these procedures from initial register to latest update are recorded and published on the NMPA's official website.

To measure *path-dependent product line behaviors*, we only counted the number of records regarding product adjustment or renewed register owing to expiration by reading the specific filing content. Records of launching new drugs were excluded to filter out non-path-dependent behaviors.

Economic institutional forces (EIF)

In this paper, we argue that the strength of economic institutional forces depends on the maturity of economic systems, as indicated by the presence or soundness of market intermediaries, appropriability regimes, and other institutional infrastructures that can manifest the degree to which markets support economic activities (Meyer et al., 2009; North, 1990). Accordingly, the marketization index published by NERI provides a desirable tool for measuring the degree of institutional development at regional level to reflect the strength of economic institutional forces (Zhou et al., 2017).

Political institutional forces (PIF)

Considering that governments wield their power selectively on the basis of the nature and attributes of potential targets (Wei et al., 2020; Ramamurti and Hillemann, 2018; Lazzarini, 2015), the strength of political institutional forces is often determined by a firm's state ownership (Genin et al., 2021; Zhou et al., 2017; Inoue et al., 2013; Wang et al., 2012) or government affiliation (Genin et al., 2021; Zhang and Greve, 2018; Li et al., 2018; Wang et al., 2012). In this study, we choose the former by recognizing that influence from the government through share holdings is much more direct than that through governmental affiliation. This finding is based on the fact that the locus of control in an

affiliation relationship falls outside the firm; external delegates from the government generally play a supervisory role (Genin et al., 2021). By contrast, the government as a shareholder can directly involve in the decision-making process and thus can better claim their interests and political will on firm strategy and operation.

We calculate state ownership by dividing state-owned shares by a firm's total shares. Data on the ownership structure and relevant shareholding proportions were obtained from the CSMAR database.

4.2.3 Control variable

In this study, we introduced seven firm-level variables which could also exert a non-negligible influence on corporate innovation performance. Firm size and age are the most commonly used control variables when talking about firm innovation performance given that large and old firms are deemed to be positioned favorably in patenting (Grimpe and Hussinger, 2014). Thus, we used the natural logarithm of total assets and the number of years since a firm's establishment to represent *firm size* and *firm age,* respectively. We also controlled for *firm profitability* using a most popular indicator - return on equity, given that a better financial performance usually leads to more innovation inputs. *Financial leverage* is controlled because firms that are heavily indebted face great pressure to survive and may not spare additional resources for activities concerning innovation, especially radical innovation. We used debt-to-asset ratio to denote *financial leverage*. Following Wu et al. (2019), we controlled for a firm's *marketing capability*, as measured by the proportion of sales expenditure in total operating revenue. Another important factor frequently mentioned is the level of financialization, of which its impact on a firm's innovation performance is mixed and requires further corroboration. While financialization is deemed conducive to innovation by improving the efficiency of resource allocation, some scholars are concerned about its potential crowding-out effect (Tori and Onaran, 2018). In this paper, *financialization level* was represented by the percentage of financial assets held for trading in total assets. In addition, we employed the ratio of the sum of value-added tax and income tax in total operating revenue to control *tax intensity*, as we consider taxation a burden on firm innovation. Table 1 describes all the variables of this study.

Table 1. Variable Description

Type	Name	Notation	Definition	Data source
Dependent variable	Radical innovation	RI	The numbers of patents with a top 3% citation rate within the sample in a given year	IncoPat
	Incremental innovation	II	The numbers of patents with a lower than top 3% citation rate within the sample in a given year	IncoPat
Independent variable	Path-dependent behaviors (product line retention and extension)	PDB	The number of records regarding product adjustment or renewed register due to expiration	The official database of the NMPA
Moderating variable	Economic institutional forces	EIF	Marketization index - the development of the product market	NERI
	Political institutional forces	PIF	The proportion of state-owned shares	CSMAR
Control variable	Firm size	SIZE	The natural logarithm of total assets	CSMAR
	Firm age	AGE	The natural logarithm of the number of years since a firm's establishment	
	Firm profitability	ROE	Return on equity	
	Financial leverage	LEV	Debt-to-asset ratio	
	Marketing capability	MKT	Sales expenditure/Total operating revenue	
	Financialization level	FIN	Financial assets held for trading/Total assets	
	Tax intensity	TAX	The sum of value-added tax and income tax/Total operating revenue	

4.3 Estimation model

The traditional ordinary least squares estimation is notably inapplicable to a count model in which the independent variables take only non-negative integer values, as in our case. When we use linear

regression model, we implicitly assume that the dependent variable has a normal distribution, which is certainly not realistic when negative or non-integer values cannot be taken. Moreover, the independent variables, namely, radical and increment innovation performance, are highly volatile and overdispersed from zero to a few hundred, with a considerable proportion of firms in our sample holding no patents, especially those categorized as radical innovation. We therefore employed a negative binomial regression model that can considerably solve the above problems (Bai et al., 2021; Wu et al., 2019; Jeong et al., 2017).

5. Empirical results

Table 2 reports the correlation coefficients and the descriptive statistics including means and standard deviations for all the relevant variables from 2010 to 2016. Every statistical estimation is followed by a variance inflation factor (VIF) analysis, and the results show that the multicollinearity problems shall not bias our model estimation using the negative binomial regression because all the VIF values stay far below the cutoff threshold of 10.

Table 2. Descriptive statistics and correlation matrix

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1.Radical innovation	1.00											
2.Incremental innovation	.52**	1.00										
3.Path-dependent product line behaviors	-.06	.33**	1.00									
4.Economic institutional forces[a]	.02	.04	.00	1.00								
5.Political institutional forces	.24**	.18**	.14**	-.10**	1.00							
6.Firm size[a]	.37**	.48**	.24**	-.05	.28**	1.00						
7.Firm age[a]	.09**	.09**	.10**	.01	.12**	.12**	1.00					
8.Firm profitability	.04	.05	.07*	-.02	.03	.08*	-.03	1.00				
9.Financial leverage	-.02	-.01	-.05	.02	.00	-.21**	.14**	-.08*	1.00			
10.Marketing capability	.05	.02	.10**	-.01	-.06	-.12**	.04	.07*	-.18**	1.00		
11.Financialization level	-.02	-.03	.08*	.00	.06	.10**	.10**	.02	-.05	-.02	1.00	
12.Tax intensity	-.01	-.05	-.07*	.00	-.08	.10**	.06	.12**	-.17**	.12**	.07*	1.00
Mean	.65	18.47	1.67	2.76	.11	21.73	3.12	0.08	0.39	0.19	0.00	0.04
Standard deviation	1.49	26.67	1.21	0.74	0.20	1.00	0.22	0.52	0.60	0.15	0.01	0.03

Note: N=896 (128 firms during the 2010-2016 period)

[a]Natural logarithm.

* and ** represent significance at the 0.05 and 0.01 levels, respectively.

Tables 3 and 4 display the results of the hypothesis testing. Models 1-6 report the results of negative binomial regression analyses on radical innovation as the dependent variable, and models 7-12 present those on incremental innovation as the dependent variable. We added variables to the baseline models step by step to test the main effect hypotheses. As shown in model 2, the level of path-dependent product line behaviors is negatively and significantly related to radical innovation performance (β = -0.369, $p < 0.01$), indicating that the more product lines a firm retains and extends, the less radical innovation patents will be produced. Therefore, H1 is supported. The coefficient remains significantly negative in model 3 (β = -0.368, $p < 0.01$) and 5 (β = -0.375, $p < 0.01$) when the moderating variables of economic institutional forces and political institutional forces are added, respectively, hence further enhancing H1. Model 8 shows the regression coefficient of path-dependent product line behaviors on incremental innovation performance, which is positive and also statistically significant (β = 0.188, $p < 0.01$). Thus, it confirms H2, which suggests that the more product lines a firm retains and extends, the more incremental innovations will be achieved. H2 is also further consolidated in models 9 and 11, as the relationships between the independent and dependent variable remain robustly stable when extra variables are included (β = 0.192, $p < 0.01$, and β = 0.204, $p < 0.01$, respectively).

To examine the moderating effects of two kinds of institutional forces, we first inserted *economic institutional forces* alone; afterwards, we introduced its interaction term with *path-dependent product line behaviors*. The same is true for *political institutional forces*. H3a and H3b are verified in models 4 and 10, where both the coefficients of the interaction term are statistically significant and consistent with the main effects in direction (β = -0.142, $p < 0.05$ and β = 0.104, $p < 0.01$, respectively). Notably, in models 3 and 9 when interaction terms are excluded, the coefficients of *economic institutional forces* are both insignificant (β = 0.026, $p > 0.1$, and β = 0.059, $p > 0.1$), which further corroborate our inferences. As predicted by H4a, the coefficient of the interaction term of the *political institutional forces* and the *path-dependent product line behaviors* in model 6 is significantly positive (β = 0.649, $p < 0.01$), implying a diametrically opposed effect on *radical innovation performance* compared

with that exerted by the *path-dependent product line behaviors* alone. Hence, H4a is supported. However, while the coefficient of the interaction term in model 12 is negative as predicted, it is not statistically significant (β = -0.086, p > 0.1), thereby providing no support to H4b. In total, 5 out of 6 hypotheses we developed are corroborated.

Table 3. Results of negative binomial regression analyses on radical innovation

	No. of radical innovation patents					
	(1)	(2)	(3)	(4)	(5)	(6)
Firm size	0.720***	0.745***	0.747***	0.745***	0.658***	0.643***
	(0.086)	(0.087)	(0.088)	(0.087)	(0.088)	(0.089)
Firm age	0.242	0.546	0.544	0.500	0.313	0.260
	(0.474)	(0.487)	(0.486)	(0.482)	(0.524)	(0.537)
Firm profitability	0.373	0.536	0.539	0.553	0.456	0.345
	(0.595)	(0.578)	(0.578)	(0.582)	(0.538)	(0.541)
Financial leverage	-0.476	-0.363	-0.367	-0.361	-0.353	-0.408
	(0.439)	(0.432)	(0.432)	(0.429)	(0.431)	(0.440)
Marketing capability	1.008*	1.098*	1.097*	1.117*	0.888	0.990
	(0.604)	(0.603)	(0.602)	(0.598)	(0.611)	(0.622)
Financialization level	-2.863	-0.057	-0.898	0.131	-0.262	0.058
	(6.102)	(5.715)	(5.722)	(5.701)	(5.665)	(5.686)
Tax intensity	-8.987***	-10.422***	-10.414***	-10.319***	-7.131**	-6.392**
	(3.340)	(3.354)	(3.351)	(3.340)	(3.161)	(3.083)
PD		-0.369***	-0.368***	0.024	-0.375***	-0.453***
		(0.055)	(0.056)	(0.205)	(0.056)	(0.064)
EIF			0.026	0.270		
			(0.122)	(0.173)		
PD * EIF				-0.142**		
				(0.072)		
PIF					2.066***	1.209**
					（0.335）	(0.474)
PD * PIF						0.649***
						(0.248)
Constant	-15.686***	-16.307***	-16.419***	-16.942***	-13.165***	-12.515***
	(2.243)	(2.296)	(2.349)	(2.336)	（2.469）	(2.518)
Log-likelihood	-807.241	-783.858	-783.835	-781.947	-764.790	-761.297

Chi-square	77.80***	124.54***	124.78***	128.71***	167.57***	165.60***
Observations	896	896	896	896	896	896

Note: N=896 (128 firms during the 2010-2016 period). Standard errors are presented in parentheses.

*, ** and *** represent significance at the 0.1, 0.05 and 0.01 levels, respectively.

Table 4. Results of negative binomial regression analyses on incremental innovation

	No. of incremental innovation patents					
	(7)	(8)	(9)	(10)	(11)	(12)
Firm size	0.375***	0.365***	0.368***	0.371***	0.364***	0.365***
	(0.041)	(0.040)	(0.040)	(0.040)	(0.040)	(0.040)
Firm age	-0.473*	-0.422*	-0.429*	-0.361	-0.472*	-0.450*
	(0.250)	(0.246)	(0.245)	(0.247)	(0.245)	(0.246)
Firm	0.118	0.066	0.065	0.059	0.064	0.065
profitability	(0.125)	(0.099)	(0.098)	(0.096)	(0.099)	(0.099)
Financial	-0.076	-0.024	-0.025	-0.004	-0.018	0.015
leverage	(0.100)	(0.091)	(0.091)	(0.088)	(0.091)	(0.091)
Marketing	-0.035	-0.027	-0.009	-0.015	0.074	0.067
capability	(0.288)	(0.286)	(0.285)	(0.285)	(0.283)	(0.283)
Financializatio	1.261	0.714	0.506	0.053	0.549	0.459
n level	(2.123)	(2.042)	(2.086)	(2.120)	(1.980)	(1.997)
Tax intensity	-2.776	-0.041	0.066	0.100	0.100	0.061
	(1.896)	(1.587)	(1.539)	(1.407)	(1.483)	(1.481)
PD		0.188***	0.192***	-0.092	0.204***	0.215***
		(0.026)	(0.027)	(0.101)	(0.026)	(0.030)
EIF			0.059	-0.164*		
			(0.066)	(0.098)		
PD * EIF				0.104***		
				(0.035)		
PIF					0.865***	0.993***
					(0.156)	(0.225)
PD * PIF						-0.086
						(0.111)
Constant	-5.578***	-5.919***	-6.142***	-5.783***	-5.881***	-5.975***
	(1.149)	(1.135)	(1.159)	(1.168)	(1.131)	(1.135)
Log-likelihood	-3015.790	-2992.8258	-2992.426	-2988.068	-2979.870	-2979.5673
Chi-square	90.62***	147.82***	148.95***	161.00***	180.73***	180.95***
Observations	896	896	896	896	896	896

Note: N=896 (128 firms during the 2010-2016 period). Standard errors are presented in parentheses. *, ** and *** represent significance at the 0.1, 0.05 and 0.01 levels, respectively.

6. Conclusions and contributions

6.1 Conclusions

In response to the research proposition of "how China's unique institutional context helps firms achieve innovation breakthroughs," we explore the effects of path-dependent behaviors manifested as product line retention and extension on both radical and incremental innovation as well as the prominent moderating role played by institutional forces. Our findings are as follows. First, path-dependent behaviors employed by firms exert an opposite effect on radical and incremental innovation performance, such that they can promote and consolidate the leadership of firms in producing incremental innovation characterized by high technological continuity through the "positive incentive mechanisms." These behaviors can also make firms lack motives and abilities to generate radical innovation via the "negative inhibition mechanisms." Second, the economic institutional forces can simultaneously enhance the effects of path-dependent product line behaviors both on radical and incremental innovation. By creating an environment which is more transparent, more efficient, and more protective of property rights, economic institutional forces can enhance the "positive incentive mechanisms" by securing and improving the degree to which firms profit from innovation. Meanwhile, economic institutional forces also increase firms' inclination to adopt efficiency logic (Zhou et al., 2017), thereby strengthening the "negative inhibition mechanisms" and intensifying the adverse effects of path-dependent behaviors on radical innovation. Third, the political institutional forces can mitigate the negative relationship between path-dependent product line behaviors and radical innovation performance, as they drive firms to employ legitimacy logic as the dominant institutional logic. They also provide abundant institutional resources as compensation for those who scrap or devalue prior investment, thereby weakening the "negative inhibition mechanisms."

The research conclusions provide an integrated theoretical implication for explaining

how firms achieve technological leaps and innovation breakthroughs under China's institutional context characterized by a powerful government leading the market development. We find that the Chinese government with strong institutional capabilities will ex ante search for the "technological highland of the future" based on factors such as national interest and technological dynamics (Lazzarini, 2015) and will exert legitimacy pressure on firms by translating this strategic foresight into an enforceable institutional framework. Thus, when firms maintain close ties with the government and are therefore strongly subject to its influence, they will be motivated or required to take a long-term view when making strategies and will no longer bargain over prior investments on extant product line portfolios and technological paths by adopting legitimacy logic (Genin et al., 2021; Zhang and Greve, 2018; Wang et al., 2012). The institutional capabilities of Chinese government are also reflected in implementing the national strategies and public policies. For those firms that respond to the government's call and make straight strides into the targeted field, the government will inject a large amount of institutional resources as rewards and reimbursement into their R&D operation through policy channels (Inoue et al., 2013; Wang et al., 2012) to further break the barriers set by path-dependent behaviors to innovation breakthrough.

6.2 Theoretical contributions

This study contributes to several strands of research. First, it investigates the effects of product line strategy on innovation from a path dependence perspective. We believe the perspective we choose is pioneering and valuable considering that previous studies regarding product line strategies overwhelmingly relied on resource- or capability-based view to theorize and thus focused on product line addition and deletion (Yu et al., 2016; Zahavi and Lavie, 2013; Karim and Mitchel, 2000). In particular, we pay attention to product line retention and extension, and find that these path-dependent product line behaviors have a mixed effect on firm innovation. On the one hand, they can facilitate incremental innovation by a "finely ploughing on extant territory" logic. On the other hand, they will hinder the generation and adoption of radical innovation achievements.

This study also complements and enriches path dependence literature both theoretically

and empirically. We submit that the relationship between path-dependent behaviors and innovation should not be straightforward as predicted by previous research (Vecchiato, 2020; Vergne and Durand, 2010; Liberman and Montgomery, 1988; 1998) but be contingent on the exact type of innovation being discussed. Moreover, research scarcely carries out statistical analyses based on large samples that examine the exact relationship between path-dependent behaviors and innovation performance, especially at firm level. We fill this gap by conducting an empirical investigation using a panel data consisting of Chinese publicly listed pharmaceutical firms in a seven-year period.

Lastly, we also hope to have a dialogue with the literature holding an institution-based view. In fact, from the research proposition we aim to respond to, identifying the mechanisms and effects of institutional forces on the relationship between path-dependent behaviors and firm innovation is expected to constitute the largest contribution of this article, as the practices of Chinese firms taking advantage of the unique institutional context in which they are embedded to realize technological catch-up provide us with theoretical inspiration. Whether Keynesianism or Neo-liberalism, mainstream economic theories all predict the unavoidable tension between the "visible hand" of the government and the "invisible hand" of the market, which can scarcely be resolved. This issue has triggered an extensive discussion on how political and economic institutions respectively affect firm behavior and performance (Fuentelsaz et al., 2015). Under this setting, we find that economic and political institutional forces function with diametrically opposed logics and mechanisms. For economic institutional forces, they have a "double-edged sword" effect and can magnify both the inhibitory effects of path-dependent behaviors on radical innovation and the stimulative effects on incremental innovation. For political institutional forces, they can reduce the negative effects of path-dependent behaviors on radical innovation. In other words, as the core actors of political institutions, the state or the government can act as a "path breaker" and help firms "smash" the barriers to innovation breakthroughs imposed by path-dependent behaviors and achieve technological upgrade. The meanings of these findings are twofold. First, previous knowledge implies that institutions are shaped by path-dependent behaviors

and postulate that actors can do nothing when the institutional development is locked into a certain track. However, we find that the institutional agents do have subjective initiative in the face of path dependence and can in turn affect the way and degree of how path-dependent behaviors exert influence on innovation by shaping and wielding both economic and political institutional forces. Second, it is commonly agreed that the so-called "perfect free market" will inevitably lead to a state of monopoly (Rietveld and Schilling, 2020) and will not spontaneously bring radical innovation. Consequently, certain government intervention is necessary. However, as for how exactly political forces stimulate and lead the market to produce radical innovation, a full discussion in the existing research has been scant. This research contributes further to fill this gap.

6.3 Policy and managerial implications

This study provides implications both for policy makers and firm managers. For governments, the policy makers should see the excellent potentials of legitimacy pressure and incentive policies. If used properly, these institutional instruments can help firms rid of some downsides of path-dependent behaviors and increase their likelihood of achieving technological leapfrog. This possible outcome is very important because nearly every industry or firm that is time-honored and thus highly developed will unavoidably face obstacles to radical innovation caused by path dependence problems. Moreover, the legitimacy pressure and incentive policies as a mix of institutional instruments are not exclusive to Chinese circumstances (Lazzarini et al., 2021; Lazzarini, 2015; Inoue et al., 2013; Scott, 1995). In fact, any sovereign government with certain authority and resources on hand is considered capable of using these institutional instruments to help firms break innovation barriers and achieve major advances. Therefore, the legitimacy pressure and incentive policy actually constitute a source of country-specific advantages (Bhaumik et al., 2015). Meanwhile, to promote incremental innovation, governments should continuously improve and perfect economic institutions represented by appropriability regimes and intermediary systems. While amplifying effects are also found in these economic forces on the negative relationship between path-dependent behaviors and radical innovation, they can be largely counteracted

by corresponding political forces.

For firm managers, they should grab the catch-up opportunities brought by institutional forces and reduce the adverse impact of path-dependent product line behaviors on radical innovation by exploiting institutional resources brought by incentive policies and employing legitimacy logic.

6.4 Limitations and future directions

This study has several limitations both in theorizing and empirical testing. First, the theoretical deduction and empirical sample are solely based on the China's context, which seriously limits the generalizability of our findings. A more appropriate and careful approach should be to build a global sample which includes firms from countries with different institutional forces and have varied innovation performance. Second, while patent data are commonly used to measure innovation-related variables (Wu et al., 2019; Delgado-Verde et al., 2016; Dahlin and Behrens, 2005), they have been criticized for distorting the real profile of firm innovation due to linkage concerns, bogus patents, and so on (Wu et al., 2019; Grimpe and Hussinger, 2014). Therefore, to provide a more holistic and accurate profile of firm innovation, future research might use alternative measures. Finally, the insignificant effect of the political institutional forces in the discussion of incremental innovation also requires attention, as it drops a hint that the political institutional forces will not necessarily reduce the efficiency of the positive mechanisms of path dependence and thus reduce the positive effect of path-dependent product line behaviors on incremental innovation. This finding is meaningful and needs further clarification as to why political institutional forces only show the good side: is this related to their directionality? Or is it conditioned by the governmental capability? Future research can dig further to determine a more insightful answer.

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Why the World Economy may not Get More Globalization in the Post-pandemic Decade: Subnational Imported Covid-19 Cases and Foreign Antipathy on Social Media

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Why the world economy may not get more globalization in the post-pandemic decade: Subnational imported Covid-19 cases and foreign antipathy on social media

Abstract

While Contractor (2022) and Ciravegna and Michailova (2022) have been debating on whether globalization would resume soon after the coronavirus outbreak, we take a different view and argue that post-COVID-19 globalization might not resume because of newly emerged foreign antipathy. Premised on the assumption that societal threats affect individual's self-construal, the study proposes that de-globalization sentiments would rise among people with greater international exposure such that globalization paradoxically triggers de-globalization. By investigating a large dataset of social media posts in 2020 via the deep learning (DL) approach, the study has found that people resident in cities with more foreign imported COVID-19 cases would express stronger foreign antipathy. Given that the perception of the pandemic is a mixture of medical remedies and political manipulation, the foreign antipathy caused by globalization may become weaker when the focal city has better health care capabilities whereas stronger if the municipal political leader carries stronger ideological conservativeness. Overall, the study is among the first to unveil that globalization facilitates de-globalization sentiments under the pandemic while highlighting that the impacts are asymmetrical under different subnational contingencies. The study further presents a methodological template of how to deal with social media data.

Keywords: Pandemic, imported COVID-19 cases, foreign antipathy, social media, subnational contingencies, deep learning

1. Introduction

As the pandemic hits societies at a fragile moment (Wenzel, Stanske, & Lieberman, 2020), the economic implications and impacts of COVID-19 have become important topics in the management domain (Alekseev et al., 2021), with particular attention toward the reconfiguration of international trade and globalization (Verbeke, 2020). Optimists postulate that those turbulences caused by the pandemic are only marginal and temporal and the global economy will need more globalization that results in net-efficiency (Contractor, 2022; Verbeke, Coeurderoy, Matt, 2018), where globalization refers to the increasing economic interdependence across nations (Chase-Dunn, Kawano, & Brewer, 2000; Witt, 2019). However, pessimists counterargue that the pandemic has deteriorated inequalities thus fueled protectionism and de-globalization (Ciravegna & Michailova, 2022).

Given that the sustainability of globalization is one fundamental premise of international business (IB) studies, we engage in an exchange of scholarly conversation with the debate from a different view. Rather than speculating whether the poor (either workers or countries) triggers opportunities for or barriers of globalization, we argue that the pandemic fosters more de-globalization sentiments paradoxically among people who have greater globalization exposure. Premised on the assumption that the pandemic and other societal threats affect individuals' self-construal (Galoni, Carpenter, & Rao, 2020), we argue that people in cities with greater international exposure, who suffered most from the pandemic by foreign imported cases, would express stronger foreign antipathy that may hurt future IB interactions, insofar as those blames constitute a conduit to drain away their ontological insecurity (Campbell et al., 2020). However, they may present heterogeneous attitudes under different

environmental contingencies, such that institutional situations may affect the effects of international exposure on foreign antipathy.

China presents an ideal context to attest to the hypothesis. It is a representative outward-oriented emerging economy with one ruling party but varied international exposures across different regions (Li, Liu, & Qian, 2019), thus the findings would not be disturbed by any preexisted political partisanship (Benton, Cobb, & Werner, 2021). The Chinese government does not take any political stance to foreign countries either since it is one of the first countries that suffered from the pandemic. While many countries have adopted the policy of herd immunity, China is one among the few countries that carefully track imported COVID-19 cases, which provides a perfect data source. Given the broad usage of social media and the fact that user-generated content (UGC) can precisely capture the societal sentiments under the pandemic (Gour, Aggarwal, & Kumar, 2022), we traced all Weibo posts (i.e., Chinese Twitter) in 2020 that are about foreign countries under the pandemic theme across the first, second, and third-tier cities by checking the latitude and longitude information of the posts. While some may concern about the bias caused by the potential media censorship in emerging economies like China, few of them would put restraints on discussions about foreign countries (Rauchfleisch & Schäfer, 2015).

Invoked on the deep learning (DL) method, we have obtained the extent of negative sentiments toward foreign countries for each city each month. Based on this comprehensive dataset, we corroborated that people in cities confronted with more foreign imported COVID-19 cases would express stronger foreign antipathy, but local health care capabilities would alleviate the concerns and costs caused by imported cases thus weakening the baseline

relationship. However, the effects become stronger when local politician has stronger ideological conservativeness toward globalization, captured by his or her age.

Overall, the study makes three major contributions. First, this study engages with and extends the scholarly debates between Contractor (2022) and Ciravegna & Michailova (2022) while introducing a new mechanism that helps explain the arisen trend of de-globalization while. In addition to the unsettled influences of inequalities and fragmentation, we unveil that globalization carries both benefits and costs for local citizens such that they paradoxically become advocators of de-globalization if suffer the most from the pandemic. This in turn reminds us that the pandemic triggers devastating societal impacts more than those direct economic turbulences. Second, the findings highlight that the perceived impacts of the pandemic are a mixture of various environmental influences. Heeding the recent call (Ru et al., 2021), we document that heterogenous institutional contingencies constitute crucial influencers underlying different responses to COVID-19 across different regions. In particular, we provide direct evidence that politicians, due to the ideological imprinting rather than partisanship (cf., Benton et al., 2021), play a significant role in the discourse of the pandemic. Third, we showcase new ways to handle social media data. Particularly, we have shown that the integration of techniques like application programming interface (API), natural language processing (NLP), location-based service (LBS), and DL can generate fine-grained data that helps predict institutional changes. The approach we have taken may present as methodological templates for future studies.

2． Literature Review and Hypothesis Development

2.1 Research on COVID-19

With the first case detected in December 2019, the coronavirus disease 2019 (COVID-19) is one of the severest global pandemics in human history, which has caused 6.2 million deaths worldwide and is estimated to decelerate the global economy by 4.1 percent in 2022 (i.e., the two data were retrieved on April 22, 2022)[1]. Unsurprisingly, a growing body of research has investigated its economic implications and impacts, such as changes in consumer choices (Campbell, Inman, Kirmani, & Price, 2020; Delasay, Jain, Kumar, 2022; Hermawan, 2021), fluctuations in stock returns (Ding, Levine, Lin, & Xie, 2021), drop in rent prices (Gupta, Mittal, Peeters, & Van Nieuwerburgh, 2021), and reduction in the survivability of small businesses (Alekseev et al., 2021; Wenzel et al., 2020).

Particularly, there emerge burgeoning attention toward the reconfiguration of international trade and globalization yet scholars have held different views on the impacts of the pandemic. Optimists posit that the heightened nationalism and protectionism induced by the pandemic will be only marginal and temporal (Verbeke, 2020). Instead, MNEs still have the motivation to seek markets and cost competitiveness and capabilities of applying tariff-jumping FDIs and digital technologies to cope with any potential barriers and hurdles (Contractor, 2022). Brakman and colleagues (2021) generally support this point by highlighting that the automation and robotization of work would allow more service-related task to be performed globally albeit the globalization of capital may shrink. Similarly, Calabrò and associates (2022) argue that large family MNEs from developed economies would continue to be a positive force in globalization after the pandemic. Although all these

studies help to establish a good foundation in this vein, there are no relevant empirical studies for analyzing the relationship between globalization and de-globalization.

While there exist continuous calls for global cooperation to fight against the pandemic (United Nations, 2022), it seems citizens from different countries are not as united as expected since the pandemic hits societies at a fragile moment (Wenzel et al., 2020). Ciravegna and Michailova (2022) directly counterargued that the pandemic has increased costs of international transactions substantially because the hegemonic role of US becomes unpopular, countries adopt measures that halt internationalization, and most importantly, intensified inequalities caused by the pandemic provide ammunition for nationalism and protectionism. However, their initiatives did not recognize that people might possess heterogeneous interpretations of foreign countries given different exposures to and costs caused by the pandemic and local institutional conditions, insofar as globalization and the spread of communicable diseases are tightly connected (Montiel, Park, Husted, & Velez-Calle, 2022; White, 2020). While those heterogeneities have been mostly omitted in prior literature (Ru, Yang, & Zou, 2021), it is actually the attitudes of grassroot individuals that affect politics and determine whether globalization is favored in the focal country or regions (Downs, 1957; Flint & Waddoups, 2021). Moreover, the discourse of COVID-19 per se takes on a politicized nature (Barrios & Hochberg, 2021; Benton et al., 2021), which may tear societies apart further especially under the recent uncertain geopolitical landscape (Witt, 2019). Unfortunately, however, Ciravegna and Michailova (2022) focused on the homogeneous effect of the pandemic without paying sufficient attention to the heterogeneous

political influences. Therefore, the examination of *whether people blame foreign countries for the pandemic* is highly needed to implicate the future landscape of international business (IB).

2.2 Antecedents of foreign antipathy

A key disagreement between Contractor (2022) and Ciravegna and Michailova (2022) is that whether globalization is self-reinforcing. Inherited from classical economics (Smith, 1776), globalization is conceived as self-reinforcing and irreversible since it promises an increase in wealth and extended consumption of desired products and services due to the comparative advantages across countries and regions (Verbeke et al., 2018). However, globalization does generate feelings of discontent (Stiglitz, 2004, 2017), especially under the recent Sino-US geopolitical contest (Luo, 2022; Witt, 2019). While Ciravegna and Michailova (2022) correctly pointed out that globalization may cause inequalities thus fuel foreign antipathy among disadvantaged groups, they have omitted that the fundamental trigger is whether people generally get influenced or hurt by globalization.

Essentially, antipathy is a strong feeling of dislike or hatred, which is an emotional response to the potential danger or violation of local norms (Glaeser, 2005). That is, antipathy is a manifestation of self-defense and vengeance such that "if we have suffered or expect to suffer some willful injury from a man, or if he is in any way offensive to us, we dislike him; and dislike easily rises into hatred." (Darwin, 1998: 239). Therefore, foreign antipathy may arise from competition for scarce resources (Glazer & Moynihan, 1970), whatever in the form of real competition or the perception of threat from people from abroad (Wimmer, 1997). In parallel, foreign antipathy can emerge from threats of their cultural identity (McConahay,

1982), where xenophobia is interpreted as a way of reassuring the national self and its boundaries especially during a national crisis (Pedahzur & Yishai, 1999).

The expression of foreign antipathy might be more authentic and prominent on the social media platforms due to their characteristic of anonymity (Kane, Alavi, Labianca & Borgatti, 2014). That is, people are more willing to express their genuine feelings since they would not face strong societal pressures as their identities are hidden. The majority of the posts on social media are circulated only among acquaintances (Haythornthwaite, 2005), whilst its real-time nature makes social media a primary source to quickly express individual attitudes toward public issues, which together make posts on social media as a reliable indicator of public sentiments (Gour et al., 2022). However, it worth to reiterate that antipathy is a feeling caused by perceptions (Glaeser, 2005), and perceived influences and/or costs would be contingent on the surrounding institutions and manipulated by political powers (Montiel et al., 2022).

2.3 Hypothesis Development

Premised on the assumption that societal threats like the pandemic affect individuals' self-construal (Galoni et al., 2020), we hypothesize that people in cities with greater international exposure would have stronger foreign antipathy that may hurt future IB interactions. This is mainly because international connection poses a health threat to the local residents especially during the pandemic (White, 2020), even though internationalization brings economic benefits. A greater number of infected diseases among those international travelers and global migrants are a twin of a greater level of internationalization in the subnational region (Montiel et al., 2022). Given that more imported COVID-19 cases lead to intensified competition for medical resources while causing psychological uncertainty and panic, foreign antipathy would

emerge as those blames constitute a conduit to drain away their ontological insecurity (Campbell et al., 2020).

On the one hand, more imported cases would compete for more scarce resources thus attract foreign antipathy. Regions with more imported cases are more likely to experience epidemic outbreaks as travelers and migrants belong to different environments and thus, they are more likely to infect local residents (Montiel et al., 2022). That is also the main reason why governments across the world take travel control as the primary measure for disease control during the pandemic time (Ru et al., 2021). China is no exception in adopting a standard and strict ban on international traveling thus number of imported cases would reflect the pure needs and extents of internationalization in the local region (Montiel et al., 2022). While those patients directly consume medical resources that can be used for local residents, they also create extra economic burden on the local government, which needs to invest more time, manpower and material resources in the prevention and control of the epidemic (Ru et al., 2021).

On the other hand, a greater number of imported COVID-19 cases would amplify the perceived lack of control over the pandemic. The imported cases and related news reports about the spread of disease would create a psychological uncertainty (Galoni et al., 2020), such that people are uncertain about whether the outbreak would be soon controlled. When it happens, the calm self-certainty that helps sustain unproblematic relations with the minorities would get lost and social postures would be shaken (Campbell et al., 2020; Wimmer 1997: 27). Therefore, whoever does not belong to the national majority is tended to be perceived as the origin of threats (Glaeser, 2005; Wimmer, 1997), as a way regain control under the

context of collective identity loss (Pedahzur & Yishai, 1999). That is, people from abroad become a scapegoat of the uncertainty and foreign antipathy would become a means to make sense of the community in the times of crisis (Pedahzur & Yishai, 1999). Taken those two together, therefore,

Hypothesis 1: *The foreign antipathy increases with more imported COVID-19 cases in the focal city*.

Notably, antipathy emerges from personal perceptions (Glaeser, 2005), which can be influenced by surrounding institutions and manipulated by political powers (Montiel et al., 2022). Therefore, we propose that local care health capabilities serve as one critical institutional contingency that influences the effect of imported COVID-19 cases on foreign antipathy. After all, health care is highly demanded during the pandemic and constitutes the main source of uncertainty among people (Ru et al., 2021). A stronger subnational local health capability would lower the foreign antipathy caused by imported COVID-19 cases first because it alleviates concerns about the competition of resources. Health care capabilities help ensure the survival of the largest possible number of patients, which can effectively reduce the public concern (Devereaux et al., 2022). Under this circumstance, the pandemic outbreaks due to travelers and immigrants can be quickly contained without affecting the local residents, thus alleviating the needs for material resources.

Second, the local health care capability would reduce the uncertainty about the pandemic thus lower the inclination to use foreign antipathy as a way to regain psychological control. A stronger health care capability also reflects the responsiveness of the local government and the effectiveness of its policies, which showcases those societal threats like the pandemic are

under control thus reducing people's psychological distress (Manchia et al., 2022). This is because the extent of social threats and consequent uncertainties would drop if information about cures, causes, and outcomes becomes abundant (Campbell et al., 2020). That is, the strong health care capability per se provides local residents with direct information source that helps assures self-certainty, thus social postures are less likely to be encroached by anomic tensions (Wimmer 1997). In consequence, local residents are less likely to hold and express foreign antipathy even when the local community receives COVID-19 patients from abroad. Given that a stronger health care capability pacifies the competition for resources while alleviating uncertainties, therefore,

Hypothesis 2: *The local health care capabilities weaken the baseline relationship such that the positive relationship between imported COVID-19 cases and the local foreign antipathy becomes weaker if the focal city has higher cure rate*.

Simultaneously, the discourse of COVID-19 per se takes on a politicized nature (Barrios & Hochberg, 2021; Benton et al., 2021). That is, foreign antipathy caused by the imported COVID-19 cases might be disturbed by the political manipulations. The history suggests that politicians can intensify hatred when people are willing to listen them (Glaeser, 2005), so would people be influenced by the local government officials with different political ideologies. Particularly, we hypothesize that the foreign antipathy caused by the imported COVID-19 cases would become stronger when the local government officials possess a more conservative political ideology. Political conservatism is an ideological belief that manifests in resistance to change, anxious concerns over social stability, and even personal anti-foreign bias (Marquis & Qiao, 2020), which usually increases when politicians become aging (Wang

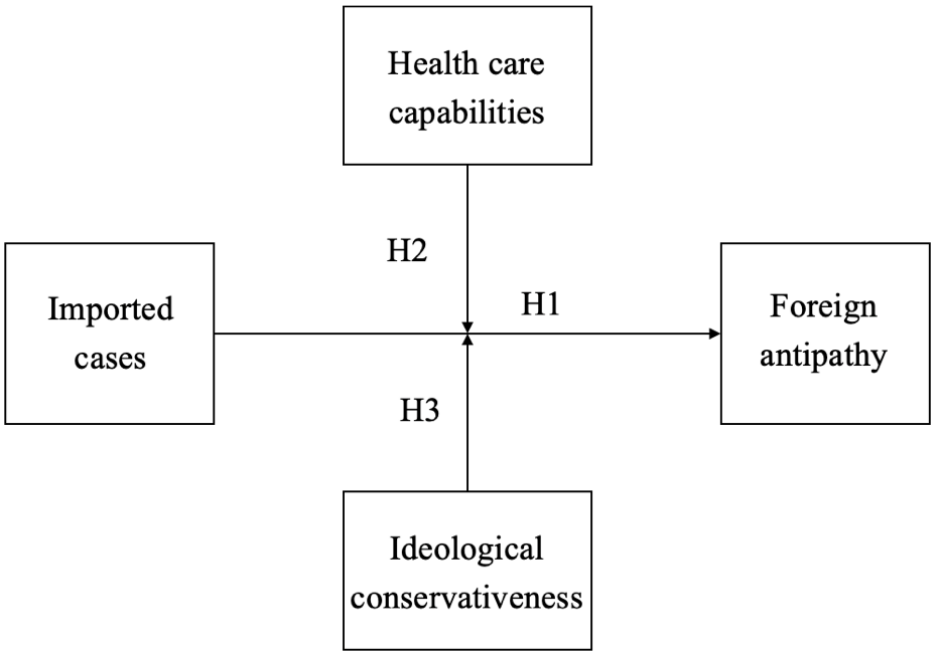
& Luo, 2019). As such, the more conservative the local government officials are, the more conservative the policy measures they will take; for instance, they may take a protracted lock-down of the city even when there are sporadic cases of COVID-19 (Ru et al., 2021). Therefore, under the same severity of imported COVID-19 cases and standard epidemic prevention policy, local government officials that are more politically conservative would take a stricter attitude and devote excessive resources in controlling the pandemic. Although the pandemic might be tightly controlled, those excessive endeavors would consume resources that should be used in other aspects (BBC, 2022). This in turn intensifies the scarcity of resource supplies while disseminating a societal anxiety thus psychological uncertainty, which make local residents tend to possess and express stronger foreign antipathy.

Moreover, those old but politically conservative government officials are usually perceived as more experienced and trustful (Horowitz, McDermott & Stam, 2005). In consequence, they are more likely to successfully disseminate their own anti-foreign bias to the public as well, strengthening the foreign antipathy caused by imported COVID-19 cases. Receiving more signals about the harmfulness of the out-group members, the speculations and rumors about the risks related to COVID-19 would also become heightened (Benton et al., 2021). This in turn introduces additional societal unrests, intensifying people's willingness to listen to and express foreign hatred (Glaeser, 2005). Because of excessive resource spending and dissemination of personal bias, older but politically conservative government officials will reinforce the foreign antipathy caused by the imported COVID-19 case. Therefore,

Hypothesis 3: *The local politician's ideological conservativeness strengthens the baseline relationship such that the positive relationship between imported COVID-19 cases and the local foreign antipathy becomes stronger if the municipal party secretary is older.*

The conceptual model is illustrated as in Figure 1.

Figure 1 Conceptual model



3. Method

We select China as the research context for several reasons. First, China is a firm proponent of international cooperation as it has benefited substantially from its open-up policy (Li et al., 2019). Any changes of attitudes among Chinese citizens under the pandemic should send a strong warning to the future landscape of IB. Second, China is a large country such that different regions have different international exposures and institutional developments (Qian, Liu, & Wang, 2018; Zhou, Gao, & Zhao, 2017). Those subnational variances constitute an ideal setting to test the hypothesized effects within one single country thus mitigating any

disturbances caused by national cultural differences. Third, China has only one ruling party. Though it might limit the generalizability of the findings, the special political characteristic helps identify influencers other than preexisted partisan conflicts (Benton et al., 2021).

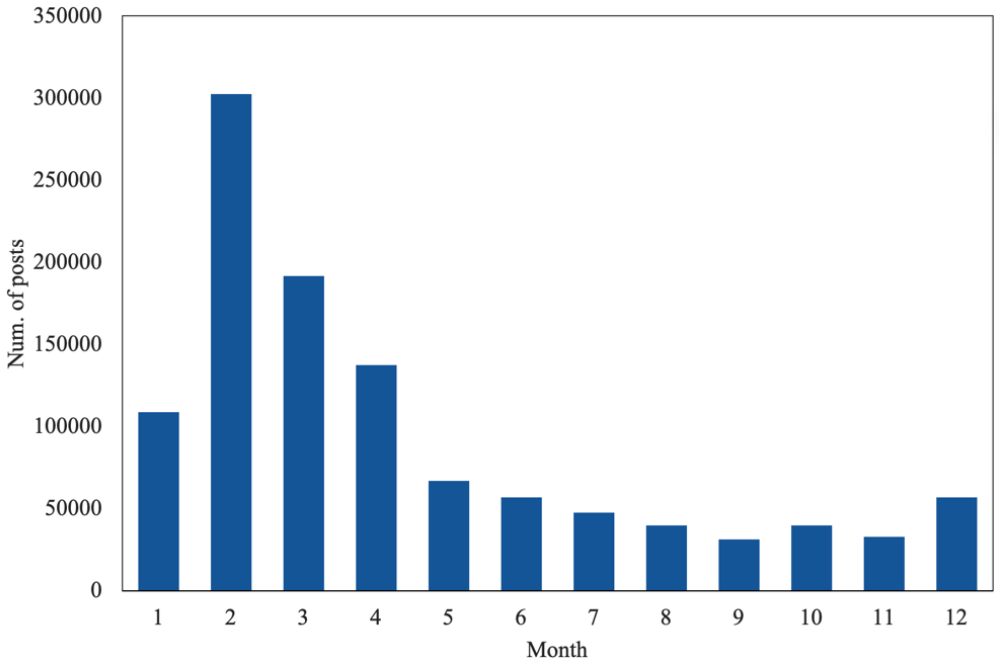
Social media is a perfect source to capture the public sentiments. Because Internet reduces costs of participation substantially thus can easily aggregate individual actions into collective actions and public attention without much political manipulation (Luo, Zhang, & Marquis, 2016), those UGCs on social media platforms are found as accurate indicators of public sentiments under the pandemic (Gour et al., 2022). By the same token, we have maneuvered all the personal posts on Weibo (i.e., similar to tweets on Tweeter) in 2020, one of the most popular Chinese social network applications among young generations with more than 573 million monthly active users (Sohu, 2022), to construct our data. As mentioned above, the potential censorship only targets at blames about Chinese government, thus the data would not be biased on attitudes about foreign countries.

Particularly, we have used a dataset on GitHub that applied advanced search API provided by Weibo to build an active user pool and then traversed those users to collect all posts (i.e., with a total number of 2,615,185,101 posts) (Hu et al., 2020). The collection period is set from 00:00 January 1, 2020 (GMT+8) to 23:59 December 31, 2020 (GMT+8). For each month, we used common keywords (e.g., “Pandemic”) and specific monthly keywords (e.g., Huoshenshan Hospital) about the pandemic (i.e., with a total number of 442 keywords) to filter all original tweets in the focal month. These keywords are comprehensive in regard to COVID-19, covering related terms such as coronavirus and pneumonia, as well as specific locations (e.g., “Wuhan”), drugs (e.g., “remdesivir”),

preventive measures (e.g., “mask”), experts and doctors (e.g., “Zhong Nanshan”), government policy (e.g., “postpone the reopening of school”) and others.[2] Referring to those keywords, we have obtained 65,175,112 tweets under the COVID-19 theme from 2,615,185,101 original tweets posted on Weibo in 2020.

Based on the latitude and longitude and time information of the posts, we have then grouped each post into 119 cities (i.e., 4 first-tier cities, 15 new first-tier cities, 30 second-tier cities, 70 third-tier cities) referring to the ranking of cities in 2019[3]. We excluded those lower tier ones because their economies are still at the developing stage and there are few Internet users. After deleting posts without geographic information, we have ended up with a final sample of 1,610,086 Weibo posts, constructing a panel dataset that includes 1, 428 city-month observations. The distribution of the number of posts with geographical information by month is shown in Figure 2. It shows that the number of posts related to COVID-19 expanded rapidly from January 2020 onwards, maintaining at least 50,000 per month. It should be noted that the data for February 2020 is particularly striking, with the number of posts in this month exceeding 300,000. A plausible explanation could be that this month was the month of the epidemic outbreak in China, which attracted widespread attention and people tweeted and/or retweeted many posts about the outbreak on Weibo during this month.

Figure 2 The monthly distribution of our dataset



3.1 Dependent variable

Foreign antipathy We have adopted the DL approach by using the sentiment knowledge enhanced pre-training for sentiment analysis (SKEP) provided by Baidu[4] (Tian et al., 2020). As the main local search engine provider in China, Baidu is specialized in analyzing Chinese language contents and the artificial intelligence algorithm has been proved as consistently generating reliable results (Zhu et al., 2021). Based on the dictionary we have developed that differentiates foreign issues from domestic ones[5], we measured the foreign antipathy by the monthly number of Weibo posts that present negative attitudes toward foreign countries for the pandemic posted by people living in the focal city.

Particularly, with the help of automatically mined knowledge, SKEP performs sentiment masking and comprehensively embeds word, polarity, and aspect sentiment information into the pre-trained sentiment representation, thus improving the general accuracy of sentiment recognition, but not necessarily applicable to our dataset. Nevertheless, we took additional

efforts to verify the validity of the model. Taking a stratified sampling approach, we extracted a sample of 5567 Weibo posts (0.5% of the full sample). A research assistant was then assigned to manually identify and label the sentiment (i.e., either positive or negative) of each post. The results were then compared with that generated by the SKEP model, and the correctness of the results can be evaluated by computing the number of correctly recognized class samples (true positives), the number of correctly recognized samples that do not belong to the class (true negatives), and samples that either were incorrectly assigned to the class (false positives) or that were not recognized as class samples (false negatives). These four counts constitute a confusion matrix shown in Table 1, which helps identify whether SKEP will confuse the two classes. Each row of this matrix represents an instance in the real class, and each column represents an instance in the predicted class. Particularly, tp denotes the number of the positive samples which are correctly classified, tn denotes the number of the negative samples which are correctly classified, fp denotes the number of the positive samples which are falsely classified, and fn denotes the number of the negative samples which are falsely classified.

Table 1 The confusion matrix identified by the SKEP model for our dataset.

Data class	Classified as *pos*	Classified as *neg*
pos	true positive (*tp* = 3160)	true negative (*tn* = 1746)
neg	false positive (*fp* = 375)	false negative (*fn* = 479)

With the confusion matrix, Table 2 then presents the most often used indicators that reflect the quality of the DL. First, the accuracy of the model is justified by dividing the number of correctly predicted samples by the total number of samples, giving a percentage of

85.17%. This ratio is acceptable as it situates between the SKEP model's accuracy rates for dataset NLPCC2014-SC[6] (83.53%) and dataset ChnSentiCorp (96.5%) (Tan & Zhang, 2008)[7], two Chinese datasets that were used by Baidu to verify the accuracy of SKEP recognition. We further applied the F1 ratio to evaluate the semantic classification by SKEP, which was introduced by van Rijsbergen (1986). F1 ratio combines recall and precision, which are calculated by dividing the number of correct positive predictions by the number of positive samples (86.8%) and by dividing the number of correct positive predictions (i.e., results predicted by the DL) by the number of positive predictions (89.4%), respectively. Therefore, we obtained a high F1 (88.1%), showing that SKEP has generated reliable results in the sentiment classification of our dataset. We have further checked the specificity (i.e., how effectively a classifier identifies negative labels, 82.3%) and areas under the curve (i.e., AUC, how effectively a classifier avoids false classification, 84.6%), both of them are at acceptable levels.

Table 2 Measures for binary classification using the notation of Table 2.

Measure	Formula	Evaluation focus	Results
Accuracy	$\frac{tp+tn}{tp+tn+fp+fn}$	Overall effectiveness of a classifier	0.852
Precision	$\frac{tp}{tp+fp}$	Class agreement of the data labels with the positive labels given by the classifier	0.894
Recall (Sensitivity)	$\frac{tp}{tp+fn}$	Effectiveness of a classifier to identify positive labels	0.868
F1	$\frac{2*Precision*Recall}{Precision+Recall}$	Relations between data's positive labels and those given by a classifier	0.881
Specificity	$\frac{tn}{fp+tn}$	How effectively a classifier identifies negative labels	0.823
AUC	$\frac{1}{2}\left(\frac{tp}{tp+fn}+\frac{tn}{tn+fp}\right)$	Classifier's ability to avoid false classification	0.846

When classifying the sentiment of the input sentences, the neural network layer in SKEP also visualizes how the model makes the sentiment judgements, making the model more reliable. Table 3 presents the results of the visualization of the neural network layer.

Table 3 Visualization of chosen samples. Words above wavy underline are mean sentiment words, and words above double underlines mean aspects. Color depth denotes importance for classification. The deeper color means more importance. The color depth is calculated by the attention weights.

Sentence Samples	Prediction
During the unforgettable spring and summer of 2020, the pandemic was gradually brought under control. Life and work return to normal and I had several happy trips with my family and friends.	Positive
It was so bad to get sick during the epidemic. I caught a high fever and had two nucleic acids testing, a CT scan, and a blood draw. I should exercise more when I get better this time.	Negative

3.2 Independent variable and moderators

Imported cases We manually collected the monthly number of imported COVID-19 cases, which are the number of COVID-19 patients came from abroad, in the focal city in 2020 from the official websites of City Healthcare Commission. We then divided it by the resident population of the focal city.

Health care capabilities We first manually collected the monthly number of total confirmed COVID-19 patients and the total number of cured patients in each city in 2020

from the National Healthcare Commission and City Healthcare Commissions, excluding the number of confirmed and cured patients from abroad. The health care capabilities were then captured by the cure rate that was calculated by $Cured\ cases_t/Confirmed\ cases_t$. We deem this measurement is more pertinent than those using the number of hospitals and physicians because COVID-19 is a new pandemic and the ability to deal with it is co-determined by many factors likes population density, resource rationing, etc.

Ideological conservativeness Because the municipal party secretary is the top leader for each city that generates greatest influences (Wang & Luo, 2019), we introduced a dummy variable that equals 1 if the municipal party secretary is approaching to the retiring age at year 2019 (i.e., age >= 60) to proxy their ideological conservativeness as older Chinese politicians are more conservative and tend to perceive foreign capitalism as evil (Marquis & Qiao, 2020). Their demographic information was manually collected from their CVs that are publicly available.

3.3 Control variables

We have further incorporated additional institutional factors that might affect the public sentiments in regard to the pandemic, especially controlling any potential influences caused by inequalities. We first introduced *distance from the political center* since cities that are further away from the provincial capital may perceive fewer influences caused by the pandemic. Given China's remarkable developments in high-speed rail system, we have used the train travel distance (kilometers) between the focal city and the provincial capital in 2020 to capture the geographic distance. Because the pandemic has interrupted economic activities dramatically (Ding et al., 2021), deteriorated economic conditions may trigger stronger

negative sentiments (Alekseev et al., 2021; Wenzel et al., 2020). We thus accounted for the *economic growth* by the GDP growth rate in 2019, *income inequality* by the GINI coefficient of the focal city in 2019 from the China Statistical Yearbook, and *economic benefits of globalization* was measured by the previous three-year (i.e., 2017-2019) average amount of FDI investments received by the focal city divided by municipal GDP, which may all affect foreign antipathy.

In regard to the demographic conditions, we have introduced the *aging population* by the number of people who are over age 60 in the focal city in 2020 since the elder people are more vulnerable to the pandemic and the degree of aging may thus cause stronger perceptions of risks (Barrios & Hochberg, 2021). We took a natural logarithm transformation to account for the skewness of the data. In parallel, we have incorporated the *population density* measured by the total population divided by the area (square kilometers) of the focal city in 2020 since high population density indicates a greater chance of contamination (Ru et al., 2021). We further controlled *education level* and *Internet access* by the total number of undergraduate students who are attending the local universities and the total number of Internet broadband access subscribers per million households in the focal city from the National Census and China Statistical Yearbook, respectively. Both of the data were collected in 2020 to capture the concurrent dynamics on social media activities, the *education level* was divided by the resident population of the focal city and *Internet access* taken logarithm transformation to account for skewness.

We also introduced a batch of variables that are directly related to the pandemic. Hospitals constitute the primary medical resources during the epidemic time, and we

introduced the *medical resources* by the proportion of total hospitals divided by the resident population of the focal city in 2019 by checking the China Statistical Yearbook. We also accounted for the *confirmed cases* by the proportion of monthly confirmed COVID-19 cases divided by the resident population of the focal city, by integrating data from the official websites of the City Healthcare Commission and China Statistical Yearbook[8]. Because pandemic restrictions affect not only the contamination but also the public sentiments (Alekskeev et al., 2022), we further introduced a dummy variable that equals 1 if the focal city has undergone a *lockdown* and 0 otherwise in the focal month. We also controlled the provincial policy responses to the epidemic referring to the Oxford COVID-19 Government Response Tracker (OxCGRT). That is, *provincial responses* variable was introduced to account for the stringency of government policies at the provincial level, a supervising body of governments at the city level, by taking the average of stringency index, stringency legacy index, government response index, containment and health index, and economic support index (Zhang et al., 2021). Lastly, we controlled for the month fixed effects to account for any other unobserved disturbances.

4. Results

Because the nature of the dependent variable, we adopted -*xtreg*- in the regression models, where the Hausman test ($p = 1$) indicates that random effect model is more appropriate. Table 4 presents the descriptive statistics and pair-wise correlations. We found the correlation between imported cases and foreign antipathy is positive and significant ($\rho = 0.199$, $p < 0.01$), lending preliminary supports for our baseline hypothesis. We have further conducted a VIF test (mean = 1.71, max = 4.5) and confirmed that multicollinearity is not a big concern for our

analysis. All the interaction terms are also created after we mean-centered the individual terms, further limiting the potential multicollinearity issues.

Table 4 Descriptive statistics

	Mean	S.D.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1) Foreign antipathy	41.590	90.190	1.000															
(2) Imported cases	0.218	1.681	0.199***	1.000														
(3) Health care capabilities	97.920	28.030	-0.159***	-0.016	1.000													
(4) Ideological conservativeness	0.412	0.492	0.099***	0.012	0.010	1.000												
(5) Distance from the political center	190.000	188.800	-0.227***	-0.086***	-0.014	-0.176***	1.000											
(6) Economic growth	0.080	0.117	-0.002	0.006	-0.019	-0.066**	-0.090***	1.000										
(7) Income inequality	0.296	0.140	-0.170***	-0.054**	-0.038	0.071***	-0.046*	0.073***	1.000									
(8) Economic benefits of globalization	29.960	25.920	0.161***	0.002	0.000	-0.170***	-0.160***	0.174***	-0.064**	1.000								
(9) Aging population	4.669	0.609	0.406***	0.042	-0.039	0.200***	-0.069***	-0.009	0.017	0.068**	1.000							
(10) Population density	8.188	10.090	0.362***	0.103***	-0.001	0.069***	-0.128***	0.016	-0.574***	0.096***	0.091***	1.000						
(11) Education level	16.600	7.457	0.505***	0.194***	-0.048*	0.114***	-0.458***	-0.051*	-0.194***	0.252***	0.235***	0.356***	1.000					
(12) Internet access	5.338	0.597	0.480***	0.100***	-0.015	0.129***	-0.270***	0.043	-0.212***	0.093***	0.783***	0.367***	0.456***	1.000				
(13) Medical resources	23.470	8.664	0.059**	0.000	-0.008	0.089***	-0.120***	-0.106***	0.220***	0.023	0.123***	-0.314***	0.189***	-0.049*	1.000			
(14) Confirmed cases	46.530	996.300	0.080***	-0.006	-0.005	-0.026	-0.025	0.008	-0.009	0.044*	0.030	0.014	0.068**	0.042	0.034	1.000		
(15) Lockdown	0.018	0.134	0.148***	-0.009	-0.376***	-0.029	-0.003	0.030	0.051*	0.020	0.097***	-0.012	0.105***	0.071***	0.061**	0.267***	1.000	
(16) Provincial Responses	54.410	14.150	0.205***	0.038	-0.110***	0.014	0.029	-0.043	-0.038	-0.036	0.068**	0.032	0.004	0.052*	0.006	0.047*	0.081***	1.000

Note: *p < 0.1, **p < 0.05, ***p < 0.01

Table 5 reports the regression results. We included control variables only in Model 1, and then introduced each hypothesized effect in a hierarchical way from Model 2 to Model 4. Model 5 is a full model that includes all the variables, serving as a preliminary robustness test.

Table 5 Regression results

	Model 1		Model 2		Model 3		Model 4		Model 5	
Health care capabilities	-0.197		-0.200		-0.211		-0.165		-0.183	
	(0.061)	[0.001]	(0.061)	[0.001]	(0.056)	[0.000]	(0.056)	[0.004]	(0.054)	[0.001]
Ideological conservativeness	45.467		45.725		46.151		42.180		43.464	
	(21.924)	[0.038]	(21.825)	[0.036]	(20.083)	[0.022]	(20.319)	[0.038]	(19.312)	[0.024]
Distance from the political center	-1.863		-1.847		-1.840		-1.717		-1.746	
	(0.342)	[0.000]	(0.341)	[0.000]	(0.314)	[0.000]	(0.317)	[0.000]	(0.302)	[0.000]
Economic growth	1913.309		1897.403		1888.767		1761.952		1791.541	
	(342.635)	[0.000]	(341.111)	[0.000]	(313.877)	[0.000]	(317.691)	[0.000]	(301.956)	[0.000]
Income inequality	-2906.217		-2880.508		-2864.815		-2675.620		-2718.325	
	(521.745)	[0.000]	(519.430)	[0.000]	(477.959)	[0.000]	(483.763)	[0.000]	(459.801)	[0.000]
Economic benefits of globalization	6.903		6.839		6.812		6.355		6.464	
	(1.358)	[0.000]	(1.352)	[0.000]	(1.244)	[0.000]	(1.259)	[0.000]	(1.197)	[0.000]
Aging population	-368.500		-367.028		-367.724		-340.068		-347.844	
	(78.195)	[0.000]	(77.841)	[0.000]	(71.626)	[0.000]	(72.489)	[0.000]	(68.899)	[0.000]
Population density	-9.777		-9.735		-9.715		-8.973		-9.162	
	(3.806)	[0.010]	(3.788)	[0.010]	(3.486)	[0.005]	(3.527)	[0.011]	(3.352)	[0.006]
Education level	26.962		26.752		26.627		24.886		25.289	
	(3.648)	[0.000]	(3.632)	[0.000]	(3.342)	[0.000]	(3.384)	[0.000]	(3.217)	[0.000]

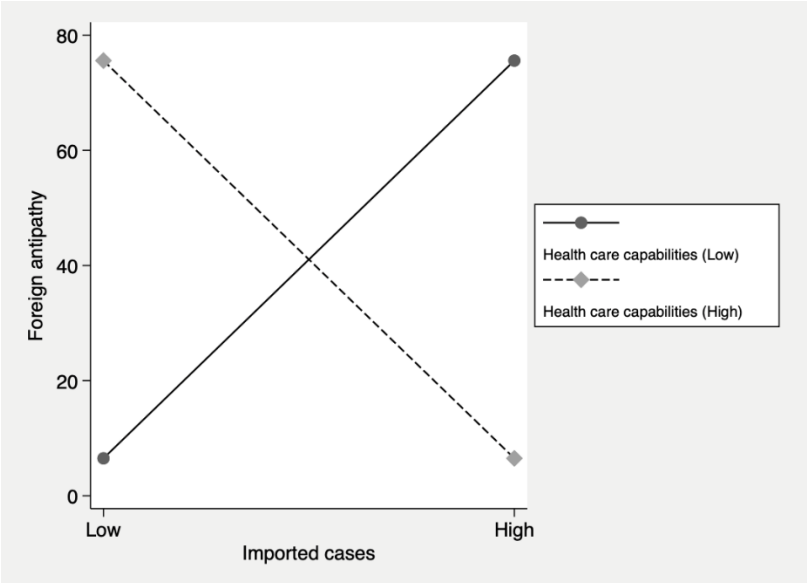
Internet access	-330.892		-325.772		-321.705		-303.339		-306.180	
	(89.053)	[0.000]	(88.661)	[0.000]	(81.583)	[0.000]	(82.551)	[0.000]	(78.460)	[0.000]
Medical resources	-11.123		-11.057		-11.048		-10.265		-10.470	
	(1.823)	[0.000]	(1.815)	[0.000]	(1.670)	[0.000]	(1.690)	[0.000]	(1.607)	[0.000]
Confirmed cases	0.002		0.002		0.002		0.002		0.002	
	(0.002)	[0.172]	(0.002)	[0.173]	(0.002)	[0.252]	(0.002)	[0.178]	(0.001)	[0.238]
Lockdown	25.305		24.971		36.332		27.257		35.519	
	(13.598)	[0.063]	(13.537)	[0.065]	(12.478)	[0.004]	(12.603)	[0.031]	(11.999)	[0.003]
Provincial Responses	0.283		0.322		0.450		0.310		0.413	
	(0.522)	[0.588]	(0.519)	[0.535]	(0.478)	[0.346]	(0.483)	[0.521]	(0.460)	[0.369]
Imported cases			3.485		4.198		66.285		49.995	
			(0.974)	[0.000]	(0.897)	[0.000]	(4.532)	[0.000]	(4.523)	[0.000]
Imported cases×Health care capabilities					-0.733				-0.573	
					(0.048)	[0.000]			(0.049)	[0.000]
Imported cases×Ideological conservativeness							65.369		47.833	
							(4.622)	[0.000]	(4.637)	[0.000]
_cons	4408.609		4367.798		4344.922		4041.166		4110.918	
	(901.702)	[0.000]	(897.688)	[0.000]	(826.015)	[0.000]	(835.992)	[0.000]	(794.580)	[0.000]
Month	Yes		Yes		Yes		Yes		Yes	
City	Yes		Yes		Yes		Yes		Yes	
N	1428.000		1428.000		1428.000		1428.000		1428.000	
Chi2	2335.869		2369.997		3034.255		2934.825		3388.151	

Robust standard errors in parentheses; *p* values in brackets

Model 2 tests Hypothesis 1 that the foreign antipathy increases with a greater level of international exposure under the pandemic. As expected, we found that the coefficient of imported cases is positive and significant ($\beta = 3.485$, $p < 0.01$), lending full supports to the hypothesis. That is, every 1 increase in the number of imported COVID-19 cases in the focal province leads to 3.485 increase in the number of criticisms toward foreign countries on Weibo posts among local citizens.

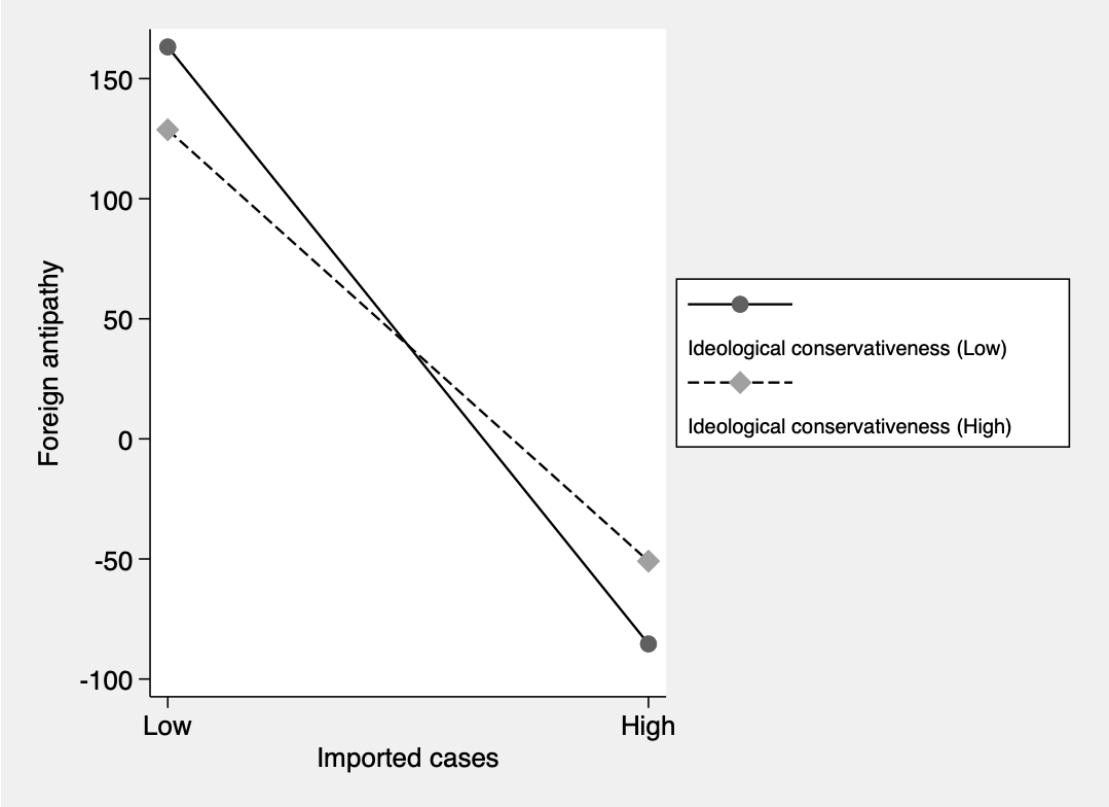
As shown in Model 3, we have also found supporting evidence for Hypothesis 2 that the local health care capabilities weaken the baseline relationship ($\beta = -0.733$, $p < 0.01$). The effect size is significant given that for the number of criticisms toward foreign countries on Weibo posts among local citizens reduces by 0.733 for every 1 increase in the cure rate in the focal city, if allowing for the influences of imported cases. Figure 3 also captures the significant alleviation caused by the local cure rate.

Figure 3 The moderating effect of health care capabilities



Model 4 investigates Hypothesis 3 that the local politician's ideological conservativeness strengthens the baseline relationship. We found that the coefficient of the interaction term between imported cases and ideological conservativeness is positive and significant (β =65.333, $p < 0.01$), providing full supports to Hypothesis 2. That is, there would be about 65.333 more criticisms toward foreign countries on Weibo posts among local citizens, for the municipal party secretary is approaching retirement age, allowing for the influences of imported cases. Figure 4 further corroborates the effects of potential political influences.

Figure 4 The moderating effect of ideological conservativeness



The results remain qualitatively similar in Model 5 that includes all the predicting variables, which serves as a preliminary robustness test as well.

4.1 Robustness tests

We have taken additional tests to ensure the robustness of our findings. We have further scaled the local foreign antipathy by the resident population of the focal city. As shown in Table 6, the results of Model 1 remain qualitatively similar such that imported cases are positively associated with the local foreign antipathy ($\beta = 6.313$, $p < 0.01$), and the health care capabilities weaken ($\beta = -0.041$, $p < 0.01$) whereas ideological conservativeness strengthens ($\beta = 5.721$, $p < 0.01$) the baseline relationship.

Table 6 Robustness tests (continued)

	Model 1		Model 2		Model 3		Model 4	
Health care capabilities	-0.040		-0.118		-0.242		-0.216	
	(0.010)	[0.000]	(0.054)	[0.029]	(0.052)	[0.000]	(0.056)	[0.000]
Ideological conservativeness	4.554		43.269		38.002			
	(3.714)	[0.220]	(19.405)	[0.026]	(18.722)	[0.042]		
Distance from the political center	-0.182		-1.732		-1.432		-2.710	
	(0.058)	[0.002]	(0.303)	[0.000]	(0.294)	[0.000]	(0.547)	[0.000]
Economic growth	179.448		1777.706		1471.413		2415.355	
	(58.076)	[0.002]	(303.474)	[0.000]	(294.117)	[0.000]	(456.407)	[0.000]
Income inequality	-274.021		-2697.164		-2228.218		-4008.469	
	(88.435)	[0.002]	(462.111)	[0.000]	(447.864)	[0.000]	(806.805)	[0.000]
Economic benefits of globalization	0.640		6.411		5.269		11.683	
	(0.230)	[0.005]	(1.203)	[0.000]	(1.165)	[0.000]	(2.618)	[0.000]

Aging population	-32.097		-345.410		-290.702		-439.389	
	(13.252)	[0.015]	(69.241)	[0.000]	(66.996)	[0.000]	(89.140)	[0.000]
Population density	-0.583		-9.091		-7.647		-3.155	
	(0.645)	[0.366]	(3.369)	[0.007]	(3.251)	[0.019]	(3.015)	[0.295]
Education level	3.093		25.104		20.992		37.745	
	(0.619)	[0.000]	(3.233)	[0.000]	(3.144)	[0.000]	(6.646)	[0.000]
Internet access	-38.411		-303.316		-241.895		-702.849	
	(15.090)	[0.011]	(78.844)	[0.000]	(76.239)	[0.002]	(190.231)	[0.000]
Medical resources	-1.044		-10.394		-8.718		-13.931	
	(0.309)	[0.001]	(1.615)	[0.000]	(1.566)	[0.000]	(2.403)	[0.000]
Confirmed cases	0.000		0.002		0.001		0.002	
	(0.000)	[0.236]	(0.001)	[0.240]	(0.001)	[0.317]	(0.001)	[0.250]
Lockdown	6.017		35.292		40.558		36.209	
	(2.308)	[0.009]	(12.056)	[0.003]	(11.638)	[0.000]	(12.454)	[0.004]
Provincial Responses	0.127		0.404		0.427		0.448	
	(0.088)	[0.150]	(0.462)	[0.382]	(0.445)	[0.338]	(0.477)	[0.347]
Imported cases	6.316						5.895	
	(0.870)	[0.000]					(1.132)	[0.000]
Imported cases×Health care capabilities	-0.041						-0.740	
	(0.009)	[0.000]					(0.048)	[0.000]
Imported cases×Ideological conservativeness	5.722							
	(0.892)	[0.000]						
Importcity			1.978					
			(0.194)	[0.000]				
Importcity×Health care capabilities			-0.023					

			(0.002)	[0.000]				
Importcity×Ideological conservativeness			1.352					
			(0.269)	[0.000]				
lnImportcity					63.069			
					(5.289)	[0.000]		
lnImportcity×Health care capabilities					-0.885			
					(0.056)	[0.000]		
lnImportcity×Ideological conservativeness					47.758			
					(5.946)	[0.000]		
Secretary_sea							106.277	
							(46.428)	[0.022]
Imported cases×Secretary_sea							-4.473	
							(1.827)	[0.014]
_cons	433.232		4079.109		3355.684		6841.133	
	(152.824)	[0.005]	(798.513)	[0.000]	(773.159)	[0.000]	(1537.507)	[0.000]
Month	Yes		Yes		Yes		Yes	
City	Yes		Yes		Yes		Yes	
N	1428.000		1428.000		1428.000		1428.000	
Chi2	3237.178		3343.449		3695.380		3051.967	

Robust standard errors in parentheses; *p* values in brackets.

Second, we applied the number of imported cases directly to see if our results are a fact of artifact caused by the resident population. Persistently, as shown in Model 2, we found that imported cases are positively associated with the local foreign antipathy ($\beta = 1.977$, $p < 0.01$), and the health care capabilities weaken ($\beta = -0.023$, $p < 0.01$) whereas ideological conservativeness strengthens ($\beta = 1.351$, $p < 0.01$) the baseline relationship.

In parallel, we applied the number of imported cases of the focal city and took a natural logarithm transformation to account for the skewness of the data. As shown in Model 3, we found that the scaled measurement is positively associated with the local foreign antipathy ($\beta = 61.974$, $p < 0.01$), and the health care capabilities weaken ($\beta = -0.888$, $p < 0.01$) whereas ideological conservativeness strengthens ($\beta = 46.624$, $p < 0.01$) the baseline relationship.

Fourth, we applied an alternative indicator of ideological conservativeness by introducing a dummy variable that equals 1 if the municipal party secretary has any overseas experience, who tends to be less ideological conservative. As shown in Model 4, we found that the results remain qualitatively similar such that imported cases are positively associated with the local foreign antipathy ($\beta = 5.895$, $p < 0.01$), with the health care capabilities ($\beta = -0.740$, $p < 0.01$) and overseas experience ($\beta = -4.473$, $p < 0.05$) weaken the baseline relationship.

Moreover, we checked whether the results of the model still existed if we excluded all the control variables. As shown in Table 7, the results of Model 1 remain qualitatively similar such that imported cases are positively associated with the local foreign antipathy ($\beta = 3.436$,

$p < 0.01$), and the health care capabilities weaken ($\beta = -0.888$, $p < 0.01$) whereas ideological conservativeness strengthens ($\beta = 46.624$, $p < 0.01$) the baseline relationship.

Table 7 Robustness tests

	Model 5		Model 6		Model 7		Model 8		Model 9	
Health care capabilities	-0.234		-0.202		-1.318		-0.073		-0.377	
	(0.051)	[0.000]	(0.060)	[0.001]	(0.514)	[0.010]	(0.052)	[0.157]	(0.065)	[0.000]
Ideological conservativeness	417.840		43.945		25.592		29.017		10.223	
	(20.531)	[0.000]	(20.499)	[0.032]	(123.810)	[0.836]	(18.789)	[0.122]	(26.544)	[0.700]
Distance from the political center			-1.726		-0.997		-1.170		-1.080	
			(0.320)	[0.000]	(1.140)	[0.382]	(0.297)	[0.000]	(0.418)	[0.010]
Economic growth			1775.874		-445.359		1207.926		1112.449	
			(320.595)	[0.000]	(782.384)	[0.569]	(296.870)	[0.000]	(421.205)	[0.008]
Income inequality			-2697.396		-1539.061		-1839.816		-1726.224	
			(488.328)	[0.000]	(1156.333)	[0.183]	(451.930)	[0.000]	(628.290)	[0.006]
Economic benefits of globalization			6.383		6.408		4.305		3.620	
			(1.271)	[0.000]	(6.735)	[0.341]	(1.175)	[0.000]	(1.759)	[0.040]
Aging population			-345.526		-971.562		-230.016		-206.868	
			(73.094)	[0.000]	(1245.124)	[0.435]	(67.617)	[0.001]	(92.636)	[0.026]
Population density			-9.097		1.185		-6.023		-4.380	
			(3.558)	[0.011]	(28.137)	[0.966]	(3.265)	[0.065]	(4.192)	[0.296]
Education level			25.111		53.833		17.119		18.995	
			(3.417)	[0.000]	(42.447)	[0.205]	(3.190)	[0.000]	(3.963)	[0.000]

Internet access			-301.324		-17.848		-208.772		-180.069	
			(83.435)	[0.000]	(92.992)	[0.848]	(76.610)	[0.006]	(99.475)	[0.070]
Medical resources			-10.371		2.320		-6.973		-6.934	
			(1.704)	[0.000]	(11.438)	[0.839]	(1.587)	[0.000]	(2.161)	[0.001]
Confirmed cases			0.068		1.790		0.002		0.108	
			(0.020)	[0.001]	(0.823)	[0.030]	(0.001)	[0.255]	(0.154)	[0.484]
Lockdown			34.421		-6.308		41.103		15.030	
			(18.278)	[0.060]	(75.569)	[0.933]	(12.223)	[0.001]	(17.710)	[0.396]
Provincial Responses			0.299		4.979		-0.237		0.179	
			(0.492)	[0.544]	(3.349)	[0.137]	(0.476)	[0.618]	(0.515)	[0.728]
Imported cases	50.145		58.345		54.591		53.958			
	(4.542)	[0.000]	(4.896)	[0.000]	(10.727)	[0.000]	(4.494)	[0.000]		
Imported cases×Health care capabilities	-0.564		-0.574		-0.303		-0.494			
	(0.049)	[0.000]	(0.049)	[0.000]	(0.123)	[0.014]	(0.046)	[0.000]		
Imported cases×Ideological conservativeness	47.995		56.222		54.365		51.862			
	(4.656)	[0.000]	(5.007)	[0.000]	(11.004)	[0.000]	(4.595)	[0.000]		
L. Foreign antipathy							0.354			
							(0.023)	[0.000]		
dummy Imported cases									137.270	
									(20.576)	[0.000]
dummy Imported cases ×Health care capabilities									-3.066	
									(0.213)	[0.000]

dummy Imported cases ×Ideological conservativeness								123.945		
								(21.123)	[0.000]	
cons	1.569		4063.996		4210.836		2394.624		2432.554	
	(15.991)	[0.922]	(843.818)	[0.000]	(4886.838)	[0.389]	(750.021)	[0.001]	(1088.767)	[0.025]
Month	Yes		Yes		Yes		Yes		Yes	
City	Yes		Yes		Yes		Yes		Yes	
N	1428.000		1309.000		216.000		1309.000		1302.000	
Chi2	3346.497		3134.612		641.142		4173.639		2922.500	

Sixth, we tested whether the results remain robust if we excluded the February data since we evidenced a peak of Weibo posts in this month. As shown in Model 2, imported cases are still positively associated with the local foreign antipathy ($\beta = 58.284$, $p < 0.01$), and the health care capabilities weaken ($\beta = -0.574$, $p < 0.01$) whereas ideological conservativeness strengthens ($\beta = 56.187$, $p < 0.01$) the baseline relationship.

We further excluded observations with zero imported cases. With the restrained sample, we consistently found the imported cases are positively associated with the local foreign antipathy ($\beta = 54.565$, $p < 0.01$), and the health care capabilities weaken ($\beta = -0.303$, $p < 0.01$) whereas ideological conservativeness strengthens ($\beta = 54.365$, $p < 0.01$) the baseline relationship.

Eighth, we examined whether potential reverse causality might bias our findings. Particularly, we applied imported cases in the previous month (i.e., t-1) and found that our hypothesized effects remain robust. We found that the coefficients of the imported COVID-19 cases remain statistically significant ($\beta = 53.911$, $p < 0.01$), and the health care capabilities weaken ($\beta = -0.494$, $p < 0.01$) whereas ideological conservativeness strengthens ($\beta = 51.839$, $p < 0.01$) the baseline relationship.

Finally, we have transformed our independent variable into a dummy variable that equals 1 if the focal city has any imported cases and 0 otherwise. We then took a propensity score matching (PSM) approach by utilizing the -*psmatch2*- command in Stata to control for any unobserved influencers and endogeneity concerns (Rosenbaum et al., 1983). We found the average treatment effect is positive and significant ($t = 3.85$), and all the moderating effects remain qualitatively similarly.

5. Discussion

It is undeniably that the IB landscape and global coordination have been influenced by the COVID-19 pandemic, given that epidemics and IB are inextricably related (White, 2020). While the economic implications and impacts of COVID-19 have received burgeoning attention in the management domain (Alekseev et al., 2021) and IB field (Verbeke, 2020), whether the globalization will resume soon after the coronavirus outbreak has remained debatable and been discussed without any empirical evidence. Premised on the assumption that the pandemic is a typical societal threat that affects individuals' self-construal (Galoni et al., 2020), we engage with the recent debate between Contractor (2022) and Ciravegna and Michailova (2022). While we concur with Ciravegna and Michailov's (2002) point that the world economy may not see greater globalization in the post-COVID-19-era, we point out that the pandemic fosters more de-globalization sentiments paradoxically among people who have greater globalization exposure.

By investigating a large social media dataset via the DL approach, the study has provided direct empirical evidence that people in cities with more foreign imported COVID-19 cases would express stronger foreign antipathy. However, the local health care capabilities would weaken the relationship whereas the local politician's ideological conservativeness would strengthen such effect. Those evidence together corroborate that globalization may not resume soon after the coronavirus outbreak because of the foreign antipathy and thus de-globalization sentiments, whatever the poor (either workers or countries) triggers opportunities for or barriers of globalization. There are more theoretical and practical implications worth to be discussed.

5.1 Theoretical implications

First, this study reconciles the debate between Contractor (2022) and Ciravegna & Michailova (2022) by introducing a new mechanism that explains the arisen trend of de-globalization. Instead of struggling with whether inequalities and fragmentation create or restrain opportunities for globalization, which is the key issue that has been debated between the two studies, we present an eclectic view that globalization carries both benefits and costs for local citizens such that they paradoxically become advocators of de-globalization if suffer from the pandemic because of globalization. This in turn challenges the assumption that globalization is self-reinforcing and irreversible (Verbeke et al., 2018), unless the ruling hegemon, which is the stabilizer of the international systems (Witt, 2019), loses its power thus causing intensified rivalries among states (Chase-Dunn et al., 2000). Our findings further unveil the devastating societal impacts caused by the pandemic, which supplement pioneering studies that mainly emphasize on the economic implications (e.g., Alekseev et al., 2021). Therefore, it is promising to explore the consequences of the pandemic in multiple aspects.

Second, the findings highlight that the perceived impacts of the pandemic are a mixture of various institutional influences. While Ru and associates (2021) have proposed that countries with the experience of SARS or not vary on their attention toward COVID-19, we further unveil that those contemporary subnational contingencies would saliently affect the perceptions of the impacts of the pandemic. Those institutional heterogeneities depict critical boundary conditions of when globalization would facilitate foreign antipathy and thus de-globalization. Joining with recent IB studies that highlight the subnational differences (Qian et al., 2018; Zhou et al., 2017), we point out that subnational contingencies would become

even more critical in the post-COVID-19-era. Moreover, we also provide direct evidence to corroborate that the discourse of the pandemic can be politically manipulated. Particularly, the manipulation can be directly driven by the ideological bias of the politicians rather than the partisanship interests (cf., Benton et al., 2021). We encourage further investigations of factors that may affect the perceptions of the impacts of the pandemic.

Third, we present new ways to handle social media data. Going beyond the initiative taken by Luo and colleagues (2016) that used the number of online articles about the focal firm to capture the online sentiments, we have shown that the integration of advanced computer-based and Internet-based techniques can generate fine-grained and reliable data with detailed geographic information and semantic indicators. The approach we have taken may provide an efficient way to test process studies that highlight dynamic features and present as methodological templates for future studies.

5.2 Practical implications

Our findings first caution that globalization would become particularly vulnerable under social threats and policymakers need to pay special attention to those regions with a greater international exposure. Local governments should strive to build a strong health care capability to the public to alleviate the concerns about competition of resources and uncertainties if they want to sustain the outward economy. Since social media posts are easily available data (Gour et al., 2022), the governments could also invite NGOs and other groups to cooperate with those social media companies to host events that stabilizing the steadiness of societies by refuting rumors. On the other hand, social media should be treated as a critical

information source for companies to keep track of customer sentiments and adjust their strategies accordingly.

Second, we remind both the central governments and MNEs of the significant influences of local politicians. Their political ideologies and interests and other personal characteristics or background would cause them to take different stances toward economic developments and inject their personal political biases to the local residents. As a consequence, the central governments may wisely nominate different local government officials for different political agendas and MNEs might better locate their subsidiaries in regions with young and progressive government officials.

5.3 Limitations and future extensions

Our study has a few limitations that can help direct future research. Although China has been a firm proponent of international cooperation and thus the findings can implicate the scenario in most of other countries, our theorization would be more robust if the findings can be replicated across different countries. In other words, it would be fruitful to generalize the findings to multiple-country samples, which could help corroborate the findings while identifying nuanced institutional and cultural differences.

Second, the hypothesized effects may evolve dramatically different if given sufficient time. Since epidemics appeared many times in the human history, future studies may chronicle the relationship between the historical pandemics and the rise and fall of globalization, particularly considering the interactions among different societal threats like wars, natural disasters, etc. Third and relatedly, we cannot investigate whether the increased foreign antipathy would certainly lead to de-globalization, although previous studies have

confirmed a strong negative relationship between negative attitudes towards international and supranational organizations and globalization (Bearce & Jolliff Scott, 2019, Bølstad, 2014). As such, we deem our theoretical speculation is reasonable but demands further empirical confirmation if given the chance.

6. Conclusion

Grand challenges like the COVID-19 pandemic dramatically shapes and re-shapes the IB landscape and global coordination. Given that the sustainability of globalization is one fundamental premise of IB studies, we engage in an exchange of scholarly conversation with the debate about whether globalization will resume soon after the coronavirus outbreak. By tracking a large dataset of social media posts, the study has proposed and confirmed that globalization leads to de-globalization under the pandemic yet the relationship can be weakened and reinforced by the subnational health care capabilities and local politicians' ideological conservativeness, respectively. In essence, the findings send an important caveat that globalization can sustain only if people perceive benefits rather than costs and such perception can be influenced by institutional conditions and political manipulation. We appreciate both Contractor's (2022) and Ciravegna and Michailova's (2022) points and hope our initiative could inspire more explorations on how the world economy will evolve.

Notes

[1] Please refer to the Coronavirus Resource Center of Johns Hopkins University and Medicine (https://coronavirus.jhu.edu/map.html) and Global Economic Prospects of The World Bank (https://www.worldbank.org/en/publication/global-economic-prospects) for further details.

[2] The detailed list of keywords can be obtained upon request.

[3] Please refer to the well-recognized rank provided by YiMagazine from https://www.yicai.com/news/100200192.html [in Chinese].

[4] The detailed list of keywords can be obtained upon request.

[5] Please refer to the well-recognized rank provided by YiMagazine from https://www.yicai.com/news/100200192.html [in Chinese].

[6] NLPCC2014-SC is provided by the third CCF conference on Natural Language Processing & Chinese Computing. Please refer to http://tcci.ccf.org.cn/conference/2014/pages/page04_dg.html for more deatail. The dataset are collected from both Chinese and English product review web site, and the labeled data is from multiple domains, such as book, DVDs, and electronics. The labels of the samples in the sample data are automatically generated according to the stars given by the users (There are 1-5 stars. Samples with 4 or 5 stars are treated as positive samples while samples with 1 or 2 stars are treated as negative ones).

[7] ChnSentiCorp is a Chinese sentiment corpus proposed by Tan and Zhang(2008). The total size of this dataset is 1021 documents that consist of three domains: education, movie, and house. There are 507 education-related documents, 266 movie-related documents and 248 house-related documents. Each domain category contains positive and negative documents.

[8] Due to confirmed cases has a strong relationship with the moderator of health care capability, we have done additional tests and the experimental results are still significant if we drop confirmed cases variable.

7. References

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Toward a General Theory of Working Capital Management

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Toward a General Theory of Working Capital Management

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Abstract

We provide a general dynamic theory of working capital management. Under asymmetric financial constraints, firms may extend trade credit; otherwise, they use market power to extract value from the supply chain. We test the latter behavior using 130,312 US and 188,876 non-US firm-year observations, exploiting the global financial crisis as an exogenous shock to firms' ability to issue debt. The results show that the crisis strengthened the relationship between market power and the cash-conversion cycle for firms outside the US. We posit that companies must consistently improve working capital—a cover against large credit market shocks.

Keyword: cash conversion cycle; market power; trade credit; profit maximization; general dynamic model.

1. Introduction

Two common statements in the corporate world (at least in Latin America) are, "Revenue is ego, profit is fantasy; what matters is cold, hard cash" and "the only parts of a

financial statement that you can trust are the name of the company and the cash balance at the end of the year. Everything else is subjective." Profit and cash generation are not interchangeable. Profit maximization is the cornerstone of the neoclassical theory of the firm, but there is no equivalent general theory on maximizing cash generation. In this study, we attempt to generalize working capital management[1] by exploring how companies with market power maximize cash generation over time. The present model departs from previous literature on the assumption that firms are perennial sellers with built-in capital investments, which allows us to identify the relationship between working capital management and market power. Here, we concentrate on the maximization of cash by managing the terms of payment.

This study argues that the cash conversion cycle (CCC) and the operating working capital (OWC) play a role in uncovering complements to fixed assets, which are the necessary investments for a company to generate financial returns. Working capital investment is a neglected area of financial economics and the dynamic approach employed in this study allows us to answer fundamental questions about it. Importantly, this approach allows the use of variables readily available from accounting data.

Usually, it is difficult to relate working capital management to product market competition because companies do not optimize a single output in the relationship between financial and operations management. Working capital investments are necessary to turn inputs into outputs, and companies, sometimes credit constrained, optimize their ability to turn inputs into cash. In the long run, in the case of surviving companies, profits and cash converge, but market power enhances the possibility of survival by cushioning shocks to cash flows. It is relatively common for companies to have solid business models but shut down due to cash constraints at some point in their life cycle (Bernanke, 1981; Dickinson, 2011). Financing from the supply chain (trade credit) is usually viewed as an expensive but important alternative

[1] At first, we use the CCC, trade credit, and working capital management interchangeably, as they all refer to how companies manage or take as given days or payments, sales, and inventory outstanding.

source of funds for financially constrained firms (Nilsen, 1994; Petersen and Rajan, 1997; Bias and Gollier, 1997; Cuñat, 2006; Carbó-Valverde et al., 2016). In many instances, it also acts as a substitute to bank credit (Nilsen 2002; Huang et al., 2011), especially for small and medium enterprises (SMEs), as well as a risk sharing mechanism throughout the supply chain (Cuñat, 2006; Acharya et al., 2014; Yang and Birge, 2017). The ability to generate cash through the management of payment terms is even more important in developing countries. While in rich countries, the current savings glut depresses real interest rates, SMEs face at least some binding credit restrictions. Evidence shows that companies lack the skills to maximize the terms of payments. In other words, companies with poor working capital management experience operational inefficiencies and leave plenty of money at the table (Zeidan and Shapir, 2017).

In the given context, our model can effectively analyze the behavior of companies that face credit constraints but have some measure of market power. Especially, it can benefit long-term profitable companies that may have experienced a cash crunch at some point in their life cycle. One of the predictions from the model is that less credit constrained firms should not fully use their market power by extending credit to smaller companies. Empirically, we bring novel evidence on the relationship between working capital management and market power. Using a sample of 11,395 US and Canadian firms and 21,613 companies from the rest of the world, we find that companies use their market power to extract value from the supply chain through the trade credit channel under slow growth conditions. Results are robust for the entire sample and the non-US companies, but they are not statistically significant between market power and the CCC (variable for working capital management) for the US companies. Given that the US-listed companies are less credit constrained than companies from the other 83 countries in our sample, we interpret the results as strong evidence supporting the model.

We also exploit 319,188 firm-year observations (130,312 US and 188,876 non-US firms) to analyze how the relationship between market power and CCC changes due to the

global financial crisis as an exogenous shock that restricts the ability of companies of all sizes to issue debt (and equity). We find that the crisis has strengthened the relationship between market power and CCC. When comparing the US and non-US firms, we observe that the effect is stronger and statistically significant for the non-US firms; this finding shows how credit constraints are more binding outside the context of the United States of America. This finding reaffirms the view that the crisis had a significant effect on credit availability around the world. We posit that, for companies worldwide, the change in behavior (improvement in working capital management) should be permanent, a form of insurance against unexpected large credit-market shocks. External market discipline (Tian and Twite, 2011) should shake companies off their quiet life (Giroud and Mueller, 2010).

The main limit to the present model's generality is the assumption of an invariant operating margin. The model can be used to answer some extant unresolved issues, such as the characteristics of industrial companies with negative CCCs, the extraction of trade credit from SMEs by large corporations (the focus of our empirical evidence), and the mechanisms that establish a relationship between lower CCC and growth opportunities. Our major contribution is a new understanding about the praxis of working capital management may introduce avenues for increasing shareholder value.

The reasons CCC management is ignored by entrepreneurs are as follows: a fundamental misunderstanding about the notion of working capital requirements, the lack of a dynamic procedure for managing investment needs, the unrelated models on inventory management and trade credit, and the uncertain nature of the relationship between CCC and the operating margin. The present model also aggregates the theoretical underpinnings of many models and empirical findings of the trade credit and working capital literature. Some of these foundations answer why firms overinvest in working capital and why such investments yield lower returns than cash holdings (Kieschnick et al., 2013), how managers of SMEs can improve

firm profitability by increasing their investment in receivables (Martínez-Sola et al., 2014), why industries with higher dependence on trade credit financing exhibit higher rates of growth in countries with weaker financial institutions (Fisman and Love, 2003), why the intensity of trade credit dependence by SMEs changes following a shock such as the global financial crisis (Carbó-Valverde et al., 2016), why smaller firms hold more cash when their CCC is long (Bigelli and Sánchez-Vidal, 2012), and why there is a non-linear relationship between accounts receivable and firm value (Martínez-Sola et al., 2013).

The outline of the article is as follows. First, we adopt a simple modeling approach; we present the results of studies on trade credit and inventory management by linking them with working capital management based on straightforward assumptions. Subsequently, we allow for stronger modeling restrictions and derive testable hypotheses regarding the non-linear relationship between market power and CCC. Finally, we show how the theory applies to companies of all sizes.

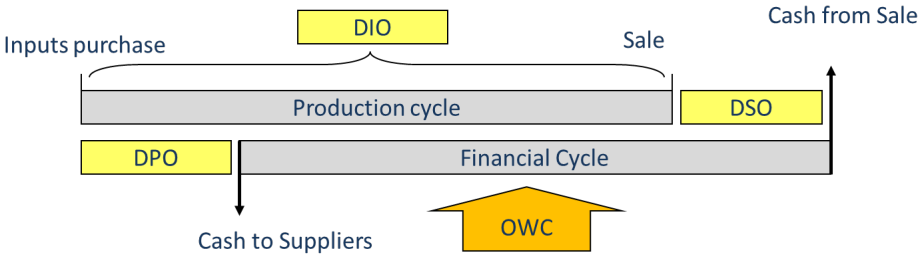
1 Antecedents of the theory of working capital management and market power

The model hinges on the pillars of cash flows, amaranthine operations, and working capital requirements similar to fixed-asset investments; both forms of capital investments represent necessary cash outflows that yield future inflows. In terms of the trade credit, the dynamic aspect of continuous operations is crucial to our approach. Many trade credit models assume a static decision in which the company or an entrepreneur can finance a project with trade credit or another source of funds. Burkart and Ellingsen (2004) present the current canonical model of trade credit. In their model, a risk-neutral entrepreneur with observable wealth can invest in a project. Bank credit and trade credit can serve as sources of finance. Banks and suppliers simultaneously present their contract offers, the entrepreneur chooses

among the offers and makes the investment/diversion decision, the project earns the payoff, and the credit is repaid.

Here, to establish the relationship between trade credit and market power, we go beyond a static, single-period investment decision in order to represent a dynamic recurrent process for trade credit. Companies use trade credit as part of their normal operations; they can use market power (or improved operations) to manage the CCC to optimize shareholder wealth. We start with a parsimonious specification and, subsequently, restrict the model. First, we start with a simple process in which market power does not play a role. The initial step behind our model is encapsulated in Figure 1, and it depends fundamentally on the concept of operating working capital (*OWC*) (for expected working capital, we refer to the working capital requirement). In this case, it must be noted that working capital requirements restrict growth. In this context, it is important to understand the basic definitions of CCC, OWC, and WCR in order to capture the model discussed in Figure 1. The basic definitions of CCC, OWC, and WCR are as follows. CCC represents the number of days taken for retrieving the first amount paid to the suppliers through sales. OWC is the amount trapped in operations that is used to finance the cash conversion process. A WCR arises when the company does not have perfect information on the days of payment or sales outstanding. Then, WCR > OWC.

Figure 1: Concept of OWC in model design.



OWC is the amount of cash trapped in regular operations, inventory turnover, and trade credit. In Figure 1, *DIO, DSO,* and *DPO* denote the days of inventory, sales, and payment

outstanding, respectively. In a world without trade credit, *OWC* can be treated as the amount of cash tied down in the production cycle. The inefficient use of cash trapped in the production process diminishes shareholder value. An optimal OWC is the amount necessary for (1) continuing the operation and (2) funding growth, keeping the probability of bankruptcy low. When there is an uncertainty about sales or consumer default, companies must choose a certain level of working capital requirement (WCR) that matches the unknown OWC.

The main initial assumptions of the model are: the firm is a single-producer with an invariant technology; trade credit already exists and the firm is a price-taker (actually, a period-taker in which the days of sales and payment outstanding are exogenously determined by market conditions and are constant); the operating margin is always constant; information is symmetrical; there are no restrictions on expanding sales, other than additional working capital*;* there is no sales uncertainty and no reason to hold extra inventories; and the probability of default throughout the supply chain is zero. Initially, a firm is simply a production function that converts inputs into outputs without facing any uncertainty associated with customers, technology, and suppliers.

Let us consider the following example. Assume a predictable demand of 1,000 units per day. Further, assume that a company starts operation on day 1 and extends credit to its customers, and hence they pay for their purchases in 30 days. Demand is certain and there are no defaults. Operating margin is positive and constant. The relationship between revenue, receivables, and cash on hand from operations are presented in the first four columns of Table 1. We can modify the simple example to examine what happens in two different scenarios—one in which 2,000 units are sold per day, and the other in which the days of sales outstanding is 45 days, instead of 30 days. The working capital investment, which is equal to receivables and is generated by the company's sales policy of 30 or 45 days, varies according to the *DSO*

and daily sales, as in Table 1.

Table 1 – Derivation of WCR

1	2	3	4	5	6	7	8	9	10
	Daily Revenue		1,000			2,000			2,000
DSO		30 days			30 days			45 days	
Day	Revenue	Receivab	Cash	Revenu	Receivable	Cash	Revenu	Receiv	Cash
1	1,000	1,000	-	2,000	2,000	-	2,000	2,000	-
2	1,000	2,000	-	2,000	4,000	-	2,000	4,000	-
3	1,000	3,000	-	2,000	6,000	-	2,000	6,000	-
4	1,000	4,000	-	2,000	8,000	-	2,000	8,000	-
5	1,000	5,000	-	2,000	10,000	-	2,000	10,000	-
29	1,000	29,000	-	2,000	58,000	-	2,000	58,000	-
30	1,000	30,000	-	2,000	60,000	-	2,000	60,000	-
31	1,000	30,000	1,000	2,000	60,000	2,000	2,000	62,000	-
45	1,000	30,000	1,000	2,000	60,000	2,000	2,000	90,000	2,000
46	1,000	30,000	1,000	2,000	60,000	2,000	2,000	90,000	2,000
47	1,000	30,000	1,000	2,000	60,000	2,000	2,000	90,000	2,000
58	1,000	30,000	1,000	2,000	60,000	2,000	2,000	90,000	2,000
59	1,000	30,000	1,000	2,000	60,000	2,000	2,000	90,000	2,000
60	1,000	30,000	1,000	2,000	60,000	2,000	2,000	90,000	2,000

The table presents the derivation of OWC from a predictable demand of 1,000 units per day and DSO of 30 days in columns 1–4. In columns 5–7, sales increase to 2,000 units per day. In columns 8–10, there is a further change, in which DSO rises to 45 days.

Columns 4–7 comprise what Zeidan and Shapir (2017) describe as the revenue effect and columns 8–10 denote the *CCC* (or cash to cash) effect. Creating similar tables for *DPO* and *DIO* will be trivial, if we assume a constant average value for inventories. Intuitively, the revenue effect is value-enhancing, while the CCC effect is value-destroying. This important

intuition is at the core of the rest of the article. Companies extend credit and incur higher CCC only if they are compensated for it, and growth is value-enhancing if it does not affect the terms of payment.

Given that the operating margin is constant throughout the article, we can define the CCC as the period necessary for a company to recover its working capital investment (the time it takes for one dollar invested to return to a company's coffers). Similar to regular profit maximization models that ignore the effects of the terms of payments in the profit function, we bypass the role of cost adjustments and price setting. Initially, as the company is a price-taker (actually, a *payment terms* taker) in a competitive market, DPO and DSO are exogenous, while DIO comes from the firm's invariant technology.

We first arrive at the same basic equations as Zeidan and Shapir (2017):

$$DSO = \frac{Accounts\ receivable}{Daily\ Revenue}, DIO = \frac{Inventories}{Daily\ Revenue} \text{ and } DPO = \frac{Accounts\ Payable}{Daily\ Revenue} \quad (1)$$

Subsequently, we can define CCC as

$$CCC = DIO + DSO - DPO = \frac{Inventories+Receivables-Accounts\ Payable}{Daily\ revenue} \quad (2)$$

If we define OWC as the capital tied up in operations (inventories + receivables – accounts payable), then:

$$CCC = \frac{OWC}{Annual\ Revenue} \quad (3)$$

Equation 3 has important economic implications. It describes the exact amount of working capital as an investment that is almost identical to fixed assets. Working capital is required in order to help a firm can sell its products (given the exogeneity, at first, of DSO and DPO as well as the invariant technology). Unlike fixed assets, the OWC never depreciates. The

only way to recover working capital investments is to stop production. The company, with complete markets that would help the company sell at a fair value, would receive the entire working capital investment in a period of time equals to *DSO.* Fabbri and Menichini (2010) extend this idea to analyze the advantages of trade credit in the likelihood of a supplier's liquidation. Concerning the gaps in literature, Equation 3 reveals the main shortcoming of the existing working capital literature—the relationship between financial constraints and working capital requirements has been based on static and not dynamic considerations. Companies can manage their DSP and DPO to extract value from the supply chain or cushion shocks to their cash flows. Moreover, financial constraints change how companies fund their growth dynamically. In this case, we can consider a scenario involving rapid growth, and hence higher investments; we can also consider slow revenue-growth periods, if at all possible, requiring relatively less capital. Although such considerations should be more relevant for privately owned SMEs, public companies, especially in emerging markets, could also be cash constrained; this should be validated by taking the propositions of the model to data.

The main tradeoff of Equation 3 comes from the straightforward relationship between OWC and CCC and the impossibility of disentangling inventory and trade credit management from accounting data by observing how OWC, as defined in the equation, changes over time. For example, in Zeidan and Shapir's (2017) project to streamline operations at MRV, the company's CCC was reduced from 508 to 351 days, despite a decline in DPO from 212 to 165 days. This decrease in DPO did not come from changing the terms of payment to suppliers. In fact, if calculated through the conventional method, $Accounts\ Payable/COGS*360$, DPO would show very little change. Even though Equation 3 brings important economic implications, we should reiterate that changes in the CCC, if calculated in this manner, are not directly separable in inventory and terms of payment effects. Until now, CCC has emerged as a variable that cannot be minimized; hence, it must be treated as the result of the production and sales

process.

By clarifying the relationship between working capital management and market power, we can answer some extant issues in the literature and provide important practical implications. Schwartz (1974) developed a model to answer the following questions: Why do nonfinancial firms commonly participate in the process of financial intermediation by extending credit to their customers? What explains differences in credit periods between firms and industries as well as the differences over time between specific firms and industries? How do changing monetary conditions affect the credit that firms extend to their customers? Advancements in the literature allowed researchers to answer these questions satisfactorily. However, the following new questions have emerged (Seifert et al., 2013): How should credit terms be structured in the presence of multiple products? Is it important to account for cash flow timing in the objective function? How do credit terms change when information is incomplete?

The present general framework reconciles some of the earlier and recent literature on working capital management, trade credit, and inventory optimization, answering the two latter questions posed by Seifert et al. (2013). It also provides insights into issues such as the substitution relationship between trade credit and bank credit; the countercyclical pattern of working capital through economic cycles (Huang et al., 2011); long payment terms as a strong impediment to the entry and survival of liquidity-constrained firms (Barrot, 2016); the optimal level of cash holdings (Oler and Picconi, 2013); the information content of trade credit (Aktas et al., 2012); the role of trade credit links in generating cross-border return predictability between international firms (Albuquerque et al., 2015); and the tradeoffs in bank credit lines, trade credit, and cash holdings (Acharya et al., 2013, 2014).

The major antecedent of this model is the one presented by Burkart and Ellingsen (2004). Their model introduces an entrepreneur who decides whether to invest in a project that

transforms input into output according to a deterministic production function that is increasing and concave. For the project, the entrepreneur would be a price-taker in both the input and output markets. The goal of their model is to establish conditions regarding information asymmetry (the quantity of purchased inputs can be observed by the input supplier, but not by banks) as well as to identify the credit limitations; these limitations must be identified because the entrepreneur can neither fund own projects with internal cash, nor borrow beyond a certain limit.

Following Burkart and Ellingsen (2004), our model changes some of its initially parsimonious assumptions. This approach helps to understand that the basic insights of the model would remain unchanged irrespective of multiple inputs or outputs.

1.1 Terms of payments' optimization and the use of market power

Before describing the model, given that the empirical strategy links working capital management to market power, we must establish a general relationship between trade credit and market power. Usually, companies use their market power to reduce costs or increase prices. In addition, they use their influence over market outcomes to deter entry, bundle products, collude, or refuse entering into a deal. However, the ability of a firm to use market power to reduce its CCC is usually ignored. In fact, many articles (e.g., Petersen and Rajan, 1995,1997; Biais and Gollier, 1997; Wilner, 2000; Nilsen, 2002; Yang and Birge, 2017)) take a reverse approach; they investigate the extent to which creditors are more likely to finance credit-constrained firms, usually as substitutes to bank credit. Following these studies, empirical works on the relationship between CCC and market power have focused on bargaining power (Fabbri and Menichini, 2010), collateral liquidation (Fabbri and Klapper, 2016), and the behavior of (de)centralized banks in concentrated markets (Canales and Nanda, 2012). Fabri and Klapper (2016) discuss the bargaining strand of the empirical trade credit literature. They

document that suppliers with weak bargaining power towards their customers are more likely to extend trade credit, sell a larger share of goods on credit, and offer a longer payment period before imposing penalties.

The main empirical counterpart of our work is Dass et al. (2014). The authors rely on a model with incomplete contracts and bargaining power to argue that trade credit can serve as a commitment device for making relationship-specific investments. The present version of our model is not capable of treating some specific characteristics of trade credit contracting (also present in Giannetti et al., 2011), but we arrive, through different means, at the same proposition as one of their main ones—trade credit is decreasing in market power (here, for upstream and downstream companies). They test their proposition on supplier and customer pairs sourced from Compustat Segments, which records data of customers accounting for at least 10% of the sales of a given firm. Our version of the hypothesis is more general—over time, trade credit (embedded in the CCC) decreases in market power for all companies. The intuition for the general nature of this relationship comes from behavior such as that of Mondelez, which unilaterally instituted payment terms for 120 days (Parekh, 2013), squeezing suppliers in the name of "payment predictability." We argue that the terms of DPO and DSO are driven by the behavior of companies with market power. Supplier and customer relationships, the nature of the transacted good, and the characteristics of the banking relationships, among others, might moderate this behavior. However, in the absence of strategic considerations, companies, in the same vein as profit maximization, act as optimizers of the terms of payment. Another way to frame this finding is that the value-extraction relationship between market power and terms of payment dominates strategic supplier and customer relationships when large companies are credit constrained. Even in the absence of credit constraints, value extraction should be prominent because supplier-customer strategic relationships represent only a fraction of all business transactions.

The results from Giannetti et al (2011) also complement our findings. The authors find that firms that are more creditworthy and have some buyer market power receive larger early payment discounts. This pertains to the tradeoff of costs and prices/terms of payments. Early (or late) payments should change firms' costs or prices. Here, by concentrating on a panel of public companies in the world, we can control for changes in prices and costs.

1.2 Determinants of Working Capital

First, we establish the main building blocks of our model. Generally, we consider that, for any substantial time, firms cannot predict all the relevant inputs for their working capital requirement (for instance, sales are not perfectly predictable). Hence, we introduce uncertainty and trends in these variables by decomposing them into a deterministic part and a stochastic part (the trend is related to firms' life cycle; sales might decrease or increase in the near future). In the case of sales (Q):

$$Q = Q_0 + N(\mu, \sigma). \tag{4}$$

Thus, quantity demanded follows a random walk with a trend (which may be any value, including zero in a simple case) and standard deviation σ. Later, we assume that trends are not equal to zero and there are different values for the standard deviation; this helps us to understand how these factors affect the optimal working capital. A similar logic holds for the price (*P*).

Overall, a firm must maintain the share of the working capital within the amount it procures to finance inputs and for the period taken to transform cash outflows for inputs into cash inflows from outputs. We develop our model in a world where firms do not generate economic rents, which implies that the operating margin equals the cost of capital. Consequently, the price of a product equals input prices plus the cost of capital.

Given the aforementioned scenario, based on the assumption that the firm uses an invariant technology and does not incur any product loss, we define WCR as the average daily output multiplied by the amount of days it takes for a firm to translate cash outflows for inputs into cash inflows from sales. The difference between WCR and OWC is straightforward—OWC is the realization of WCR (WCR = E(OWC)). For the moment, we assume that firms do not maintain additional liquidity cushions. Later, we drop this assumption. Moreover, we replace the equity sign with an approximation to acknowledge that the noise in the stochastic process is not known when setting the WCR.

$$OWC \sim CCC \cdot P \cdot Q \tag{5}$$

Components in equation (5) can be subdivided into deterministic and stochastic parts. The related CCC (as in Zeidan and Shapir, 2017, with an invariant operating margin) is given below:

$$CCC \sim DSO + DIO - DPO + N(\mu_1, \sigma_1) \tag{6}$$

While DIO is mostly determined internally, DSO and DPO are functions of interactions with other firms. The degree to which a firm can influence the difference between the two depends on its market power relative to suppliers and customers. Consequently, we define market power as the firm's ability to push the difference between DSO and DPO to a negative number. Certainly, in the same way that contestability constrains monopolies in regular profit maximization practices, there are limits to the extent to which firms can exploit their market power. The intuition is straightforward—if a focal company uses its market power to drive customers toward faster payment of bills, then it may experience a decline in the number of orders. We incorporate this into the model as an elasticity of demand (we denote this as ν in accordance with Nadiri 1969), with respect to DSO. It must be noted that this elasticity is usually positive because, other than in price elasticities of demand, customers prefer a higher

DSO over a lower DSO; this is similar to preferring low- to high-priced goods and services[2]. Consequently, market power is represented by $\nu_{DSO,Q}$.

$$\nu_{DSO,Q} = \frac{dQ}{dDSO} \cdot \frac{DSO}{Q} \quad (7)$$

This elasticity implies that, in a period following a reduction in the DSO, customers demand fewer units of the product provided by the focal firm (since the operating margin is invariant). This translates into:

$$Q_t = Q_{t-1} \cdot \left(1 + \frac{\Delta DSO \cdot \nu_{t-1}}{100}\right) + N(\mu, \sigma) = Q_{t-1} \cdot \left(1 + \frac{\Delta DSO}{100} \cdot \left[\frac{dQ}{dDSO}\right]_{t-1} \cdot \frac{DSO_t}{Q_{t-1}}\right) + N(\mu, \sigma) \quad (8)$$

Equation (8) reflects that, depending on its market power and the associated DSO-elasticity of demand, a firm may extend different degrees of trade credit. The higher a focal firm's market power, the weaker is the DSO-elasticity of demand (the simplest way to interpret this is a lack of alternatives by customers). The weaker this elasticity, the more negative is the difference between DSO and DPO. Firms with more market power increase DSO such that there is a decrease in their demand for working capital and an increase in customer's demand for working capital. This practice is followed by the firms up to the point wherein the reduction in sales becomes equal to the reduction in working capital cost.

In addition, we are concerned with the optimization of WCR in order to minimize

[2] This is true for any opportunity cost higher than zero (and no transaction costs). Below are two examples where this assumption is violated, which should highlight its simplicity.
Zeidan and Shapir (2017) present an example wherein, based on the calculations presented in Table 1, the CFO of an SME, the daughter of the CEO, finds the company's overinvestment in working capital to be at US$ 1.2 million because of the CEO's policy of paying every bill on the day it arrives. Although CEO can proudly proclaim that the company is always debt free due to this practice, the CEO must ensure that the company has a steady the cash inflow. Concurrently, the company's slow expansion is restricted by its drive to never issuing debt when it can be avoided. Disapproving these practices, the CFO announces that the company would change its policy immediately, paying all the bills on their due date, and thus freeing the U$1.2 million to finance its long-sought expansion.
The second example comes from Sweden. Many rich countries have been facing savings glut and negative yields on long-term public debt. In the Scandinavian country, in 2018, a law stipulated that the federal government must pay a small interest on income tax refunds. Many individuals proceed to prepay their annual taxes, purposely paying the highest possible amount and forcefully lending money to the government. This behavior can be curbed only after the law strikes down the clause on interest payments on tax refunds.

the probability of insolvency. Therefore, we do not include a function for overall profits, which would require a substantially more complex model and a relationship between payment terms and costs alongside the modeled relationship between these terms and sales. The limitation of this approach is that we lose some generality and fail to capture some of the negative effects of extending unfavorable terms to value chain participants. We focus on the reduction in sales because of shorter DSO, which is represented by the DSO-elasticity of demand. To recover some generality, we introduce an exogenous constraint that limits the degree to which a firm uses its market power. This constraint in the downstream market is set relative to a firm's market power in the upstream market. The constraint limits the lower end of the DSO space according to the following relation:

$$DSO_{min,t} = max\left\{DPO_{t-1} \cdot \left(1 - \frac{\nu_{t-1}}{100}\right), 0\right\} \tag{9}$$

Equation 9 implies the symmetricity of the market power between the upstream and downstream relationships in the supply chain. Therefore, there is only one elasticity ($\nu_{DSO,Q}$) that connects market power to the CCC. In this sense, market power defines the minimum DSO value a firm may achieve for any given DPO value. Consequently, the minimum CCC a firm can achieve is the sum of DSO_{min} and DIO. For simplicity, we set DIO to zero for simulations but incorporate it in the empirical part.

1.3 Transaction costs

We started by introducing uncertainty in sales and price. In this section, we extend the model to comply with a more realistic setting. We add borrowing and transaction costs. The cost of capital plays a role in working capital management, even for firms without borrowing constraints. The (opportunity) costs of working capital investment are increasing in the weighted average cost of capital ($WACC$). Adding the cost of capital also allows us to

incorporate the economic impact of OWC (and thus WCR) volatility. Less predictable WCR prompts larger working capital costs. The economic cost of a chosen WCR over a period is represented by:

$$CF_{WC} = WCR \cdot WACC = CCC \cdot P \cdot Q \cdot WACC \tag{10}$$

Trade credit transactions are usually more complex than simple cash payments, from paperwork to monitoring of payments and costs associated with defaults and delays. However, equity and other types of debt, which are the alternatives to trade credit, have their own sets of transaction costs. The extent of relative transaction costs is important for the choice of trade credit in relation to its alternatives, and it also constrains the procedure for minimizing CCC in the empirical part of the study.

The variable TC_{WC} represents the transaction cost of changing the amount of financing taken out from third parties (that is, not retained cash or financing from the supply chain). We assume that taking out additional funding and reducing a line of credit incur a symmetric transaction cost τ. The motivation for this lies in the administrative process required to manage the amount of financing taken out from third parties.

$$TC_{WC,t} = |CCC_t \cdot P_t \cdot Q_t - CCC_{t-1} \cdot P_{t-1} \cdot Q_{t-1}| \cdot \tau. \tag{11}$$

The WCR to minimize the probability of default depends on previous periods' characteristics, making the model inherently dynamic. Thus, for the total financial effect of holding as well as raising working capital is:

$$CF_{WC,t} = CCC_t \cdot P_t \cdot Q_t \cdot WACC_t + |CCC_t \cdot P_t \cdot Q_t - CCC_{t-1} \cdot P_{t-1} \cdot Q_{t-1}| \cdot \tau \ . \tag{12}$$

2 The simulation

Mistakes in setting WCR lesser than OWC limit sales growth and may result in insolvency. In order to understand how firms manage their working capital, a point estimate of WCR is not enough. Firms typically choose a liquidity buffer on top of their WCR to cushion themselves from unexpected shocks. In this section, we use the model presented above to run simulations that estimate the number of buffered holdings needed for companies to operate in an unimpeded fashion. To this end, we estimate the amount of capital necessary to push the probability that the demand for working capital would exceed the amount firms hold below a certain probability (initially, 5%; it means that firms will need to unexpectedly raise cash or go insolvent once in every 20 simulations, on an average). We run 100 simulations of 1,000-time steps, thus assuming that companies plan to operate indefinitely.

2.1 Boundary conditions

In the simulations, we introduce a few additional contingencies that constrain the model, in order to avoid singularities and corner solutions. We also integrate different incentives to reflect that firms do not make working capital decisions in isolation, but in the context of other managerial decisions and with their own sets of objective functions. First, we model firms' use of market power as a gradual process. Firms cannot (ab)use their market power (conceptualized as $\nu_{DSO,Q}$) immediately. The changes in DSO are delayed if firms exert market power. Second, we introduce a parameter that captures firms' willingness to use their market power. The higher this coefficient, the faster is the firms' transition from higher values of DSO to lower values of DSO to the extent to which their market power allows it. There are many reasons firms may not want to use all their market power or may refrain from using it immediately. One reason is that exerting pressure on their supply chain will introduce a nonzero probability of shocks to sales (Q). Since customers may not be able to repay the debt quickly,

they may either default or simply order from different suppliers. If customers become illiquid and delay payments, there will be a rise in the WCR (and OWC) of the focal firm. The mere act of using market power to reduce a company's OWC may contribute toward raising it. Other incentives to refrain from (ab)using market power comes from the non-modelled long-term contracting costs, input quality, effect on variable costs, relationship-specific investments, and anti-trust oversight, among others.

2.2 Parameters and paths

For the first set of simulations, we choose a relatively simple set of parameters. We set the number of goods sold in the first iteration (Q_0) to 50, the same as P_0 (the price of one item). We set their trend to zero and introduce a standard deviation of 1 for both items. The cost of capital ($WACC_0$) is set to 10%, with a trend of zero and a standard deviation of 0.1%. The initial DSO is 30, while the initial DPO is 20. DSO and DPO do not record an exogenous trend, only a standard deviation of 0.1. Figure 2 illustrates how the working capital and the transaction cost to maintain the level of working capital change over time for the initial setting in which the firm uses its market power to lower DSO from 30 to 10 gradually over the 1,000 time steps (with DPO fixed at 20) under the parameters given above.

Figure 2: Simulation of OWC as firms use their market power

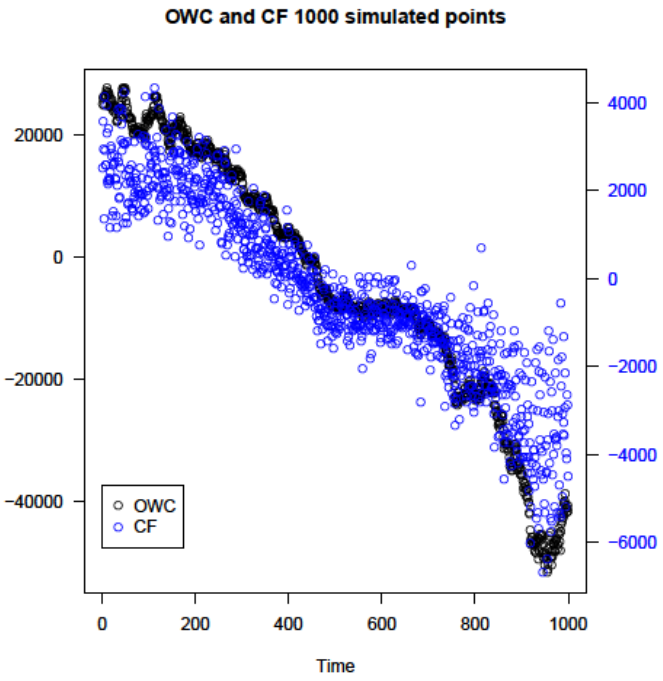


Figure 2: Cash flow impact, given transaction costs, of changes in operating working capital in a simulation of 1,000 iterations. OWC changes as the firm uses its market power to reduce the CCC from +10 (DSO: 30, DPO: 20) to -10 (DSO:10, DPO: 20).

Figure 2 shows how OWC (the realization of WCR) changes as the firm uses its market power to reduce the CCC from +10 (DSO: 30, DPO: 20) to -10 (DSO:10, DPO: 20) over 1,000 iterations. This process entails a positive cash flow of approximately 40,000 because of the reduction in OWC. As indicated by the blue data points, interest payments, which start between 1,000 and 2,000, decline to zero and become negative (the firm earns an interest from a negative cash conversion cycle) with a decline in the working capital. The relatively large variation at the beginning and end of the plot is explained by the variation in P and Q (for the black data points) and the variation in WACC (for the blue data points), which is reinforced if the operating working capital is nonzero.

2.3 *Simulating firm behavior*

Firms do not actively manage (point estimate) their working capital every period as it would introduce substantial monitoring costs and insolvency risk. Therefore, we move our simulation by one level of abstraction to determine the amount of WCR firms must hold at the beginning of a simulation in order to obviate their need to take on additional capital over a certain period. We simulate 100 paths (each corresponding to 1,000 iterations shown in Figure 2), assuming that companies want to keep the probability that realized OWC is higher than WCR below 5%. We argue that this is a reasonable proxy for the strategy that firms would adopt in order to maintain operations under uncertain OWC. Subsequently, we explore how changes in parameters impact WCR; this examination helps us to develop testable predictions. Figure 3 shows how the WC necessary to keep the probability of default below 5% increases with the standard deviation in Q. In Figure 3, the standard deviation of Q is allowed to vary between zero and one.

Figure 3: WCR to keep default probability < 5%.

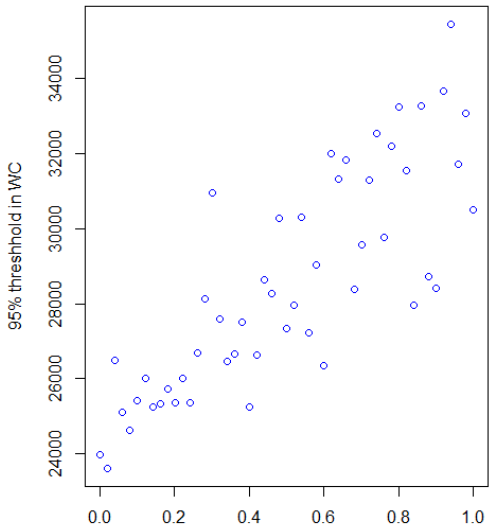


Figure 3: WCR a function of standard deviation in sales. The firm's goal is to keep default threshold below 5%.

Proposition 1: The higher the uncertainty in Q, the higher will be a firm's WCR.

Figure 4: Market power and WCR to keep default probability < 5%

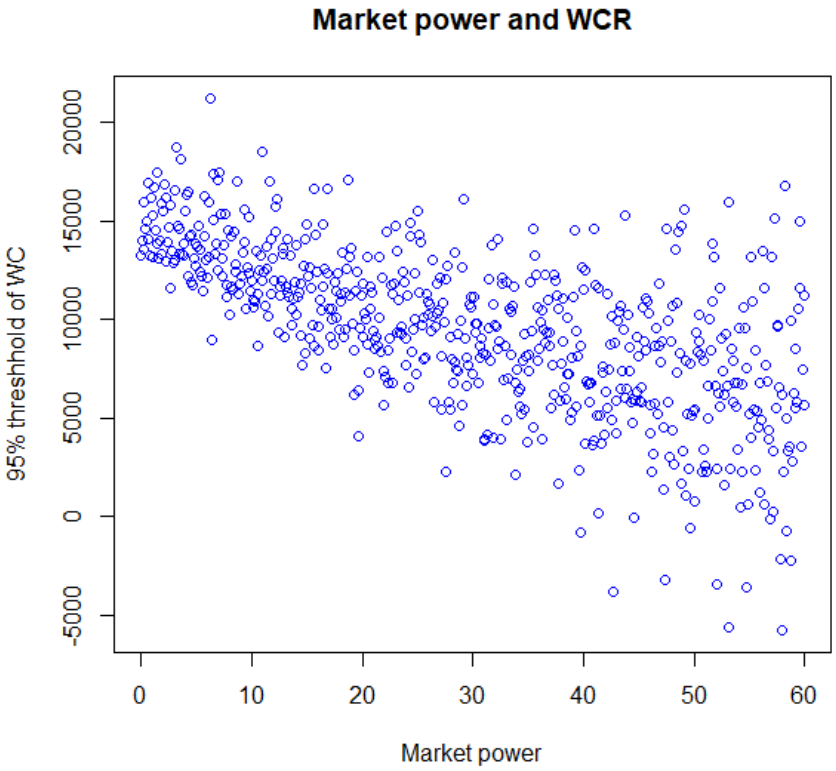


Figure 4: Simulation of working capital requirement changing as a function of market power ($\nu_{DSO,Q}$), which varies between 0 and 60. Initial P and Q are 50. The firm defaults with a 5% probability.

The study intends to show the dependency of the WCR on the market power, as expressed by $\nu_{DSO,Q}$ (Figure 4). Following the elasticity logic presented above, the minimum DSO a firm can achieve decreases with increasing market power ($\nu_{DSO,Q}$). This means that, for any initial setting of DSO relative to DPO, the CCC will move toward DSO_{min} minus DPO. As shown in Figure 2 above, this transition is not instantaneous, but spread out over the iterations of the simulation. Nevertheless, the average WCR decreases with the minimum in DSO. This

relationship is shown in Figure 4. Positive market power implies that focal firms can push DSO below DPO. An increase in market power increases the difference between DSO and DPO. Consequently, the amount of capital necessary to avoid illiquidity is reduced. Owing to the noise in the variables that influence WCR, Figure 4 only shows a general trend. The variance in WCR around the mean increases with increasing market power because of an increase in the spread between DSO and DPO. Based on the simulation shown in Figure 4 we propose:

Proposition 2a: The higher a firm's market power, the lower will be its WCR.

Proposition 2b(corollary): The higher a firm's market power, the lower will be its CCC.

Finally, we present some simulations on the relationship between market power and an initially negative cash-conversion cycle. The simulation is present in Figure 5 and is straightforward. Given that a negative cash-conversion cycle allows companies to increase cash-flow as sales grow, the expected relationship between market power and WCR is clear: as companies use their market power, their required working capital decreases.

Figure 5: Market power and WCR with an initially negative CCC to keep default probability < 5%

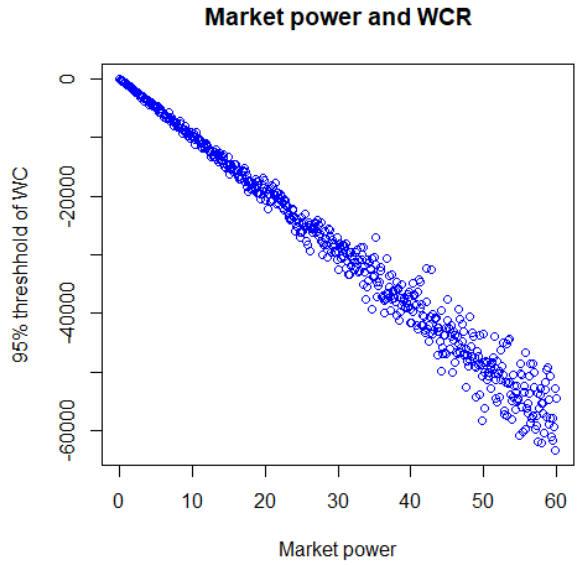


Figure 5: Simulation of working capital requirement changing as a function of market power ($\nu_{DSO,Q}$), which varies between 0 and -60. Initial P and Q are 50. The firm defaults with a 5% probability.

3 Market power and CCC

We operationalize the relationship between market power and working capital management by establishing CCC as the dependent variable. It seems natural to use DSO and DPO instead of the CCC as dependent variables. However, for our model, it is crucial that cash generation enables a firm to avoid bankruptcy or record stronger sales growth. Even though we assume it invariant for our purposes, integrating inventories in the main dependent variable is important for capturing how shocks propagate to decisions on cash management.

Our model identifies the ways by which companies can reduce their CCC. We show how the global financial crisis impacts the CCC of companies around the world. Instead of simply responding to changes in the payment terms of inputs and goods and services sold, market power allows companies to react to a large shock such as the crisis. We also check how working capital management affects firm value by linking it to Tobin's Q.

3.1 Data

Our database contains data on 33,008 firms for the period 1962–2017; the data were downloaded from the Global COMPUSTAT. Using Global Financial Data (database), we convert all foreign currency items to USD (global firms). We remove financial institutions assigned with standard industrial classification (SIC) codes between 6000 and 6799. The final sample is composed of 11,395 US and Canadian firms (American firms hereafter) and 21,613 firms from the rest of the world (other firms, hereafter). The number of firm-year observations

is 319,188 (130,312 and 188,876 on American and other firms, respectively) from 85 different countries.

Table 2 describes the definition of all the variables used in our study, using Global Compustat fields.

Table 2: Descriptions of variables

Variable	Formula
CCC	wcap - che + dlc - aco + lco
Sales	Revt
Industry Sales	$\sum_{i=1}^{t} Revt$
Market Share	Sales / Industry Sales
Growth Rate (lag)	$\frac{Sale_t - Sale_{t-1}}{Sale_{t-1}}$.
Long-Term Debt	Dltt
Total Assets	At
Debt in Current Liabilities	Dlc
TQ	Equity value + book value of long-term debt + net current liabilities) / (value of total assets)

CCC, as usual, is calculated as working capital minus cash and short-term investments plus debt in current liabilities minus current assets plus current liabilities[3]. The

[3] For robustness check, we also use receivables plus inventories minus accounts payable, as a different measure

market share for each observation is represented by the sales of the firm divided by the total sales of the industry in that country[4]. Tobin's Q is calculated as usual (e.g., Kroes and Manikas, 2014)[5]. We winsorized all variables at the 1st and 99th percentiles.

3.2 Methodology

To recover our parameter of interest, we mainly assume that the market power aspect of working capital management is more important than its financing aspect; the reason behind this assumption can be attributed to the fact that companies operate in an imperfectly competitive landscape. Firms with market power (proxied by market-share) can extend or reduce their CCC by changing terms of payment to suppliers and consumers. Putting the lens on some dimensions of the competitive environment, such as supplier competition, allows researchers to measure the willingness of firms to provide trade credit financing (Chod et al., 2019). Our empirical strategy focused on how firms change (reduce) their CCC under varying market power. We answer this question based on the variation in explanatory variables and the main output, CCC, in our sample. Moreover, since these two aspects work in opposite directions, recovering a negative association between market-power and CCC is more likely to be related to salient behavior. Importantly, we control for different competitive pressures regarding firms' decision-making. We expect the relationship between CCC and market-power to weaken in situations where firms' can potentially increase profitability by extending terms of payment; we also expect the relationship to strengthen when shocks reduce the ability of large companies to

for CCC.

[4] In order to distinguish between different industries, we use a 3-digit SIC code. We aggregate all the firms' sales in each 3-digit code.

[5] As a robustness checks, we also use the following equation: (Total Market Value minus cash and short-term investments plus long term debt and debt in current liabilities) divided by (total assets minus current assets) or (mkval - che + dltt + dlc) / (at - act). Additionally, we use the following Tobin's Q, as in Aktas et al. (2015): the market value of equity (PRCC times CSHO) plus total assets (AT) minus the book value of equity (ceq + txdb), divided by total assets (AT).

issue debt or equity–if a firm finds itself in a scenario wherein it has to maximize cash generation, then it will use its market power to squeeze consumers and suppliers.

We explore the relationship between market power and CCC by estimating the following random-effect regressions:

$$CCC_{it} = \alpha + \beta \cdot Market\ Share_{it} + \gamma' \cdot x_{it} + \rho_i + \varepsilon_{it}$$

Where CCC_{it} is the CCC of firm i at time t; $Market\ Share_{it}$ is its market share (proxying for market power); x_{it} is a set of control variables comprising sales, industry sale, growth rate (lag), growth rate (lead), long-term debt, total assets, short-term debt (in current liabilities), and TQ; ρ_i is firm i's normally distributed random effect; and ε_{it} is noise. $Market\ Share_{it}$ is our variable of interest.

We examine whether firms with market power (greater market share) maintain smaller CCC. We also explore the effect of credit constraints on the connection between market share and CCC by comparing firms from the US (less credit-constrained) with firms from the rest of the world (more credit-constrained). In addition, we check whether this relationship is similar between firms with positive and negative CCCs. To identify the relationship to credit-constraints, we use the Global Financial Crisis (GFC) as an exogenous shock to the extensity of credit constraints around the world.

3.3 Results

Table 3 presents the descriptive statistics of the sample. The CCC is 92.07 days with some negative observations (minimum of -38.21). The average market share in our sample is 0.22. However, half of the observations are of firms with a market share at or below 0.05. Sales and total assets are also highly skewed reflecting the presence of some mega firms. Tobin's Q

is in accordance to the scale of previous studies, ranging between 0.34 and 7.02, with an average of 1.37. Overall, it appears that the sample is similar to that in previous literature and that it contains sufficient diversity in market power proxy in order to be relevant for our research.

Table 3: Descriptive Statistics

	Obs	mean	Sd	Median	min	max
CCC	319,188	92.07	81.57	78.03	-38.21	635
Market Share	319,188	0.22	0.32	0.05	0.00	1.00
Sales	319,188	1475	4025	248	4.93	30735
Industry Sales	319,188	31675	54311	8705	4.93	460948
Growth Rate (lag)	319,188	0.13	1.07	0.07	-1.00	383
Long-Term Debt	319,188	360	1166	18.32	0.00	8275
Total Assets	319,188	1766	5133	262	4.53	40273
Debt in Current Liabilities	319,188	132	439	13.03	0.00	3895
TQ	319,188	1.37	0.98	1.07	0.34	7.02

This table shows the descriptive statistics for the period 1962—2017. The Cash Conversion cycle (CCC) is calculated as follows: working capital (balance sheet) – cash and short-term investment + debt in current liabilities and current liabilities – current assets. Market share is $\frac{Sales}{Total\ Sales}$ where Total Sales is the aggregate sale of all firms in the same year, sector (3 digits SIC), and country. Growth Rate (lag) is calculated as $\frac{Sale_t - Sale_{t-1}}{Sale_{t-1}}$. The Tobin's Q is calculated as in Kroes and Manikas (2014).

We first examine the relationship between CCC and market share. Table 4 shows the result of random-effect regression for CCC with market share, several control variables, and

year dummies. The regression is conducted on the entire sample and for two sub-samples—the US firms and other firms. Focusing on the control variables, all coefficients (except for the long-term debt in the entire sample, total assets of the US firms, and the lead growth rate of the other countries) are statistically significant with the expected sign. Larger firms (based on total assets) with fewer sales (own and industry's sales) and higher dependence on short-term debt and lower dependence on long-term debt have longer CCC. As in previous studies (e.g., Zeidan and Shapir, 2017), a longer CCC is also negatively associated with Tobin's Q. Concerning the relationship with growth, past growth predicts shorter CCC (possibly due to the exhaustion of inventories), while longer CCC predicts higher future growth rates (through the revenue effect). Concerning the market power, results for the entire sample and other firms (but not the US firms) confirm a negative relationship between CCC and market power.

Table 4: CCC and Market Power

Variables	All Firms	US	Others
	(1)	(2)	(3)
Market Share	-9.671***	-2.723	-13.614***
	(1.560)	(2.303)	(1.896)
Sales	-0.003***	-0.001***	-0.005***
	(0.000)	(0.000)	(0.000)
Industry Sales	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)
Growth Rate (lag)	-1.710***	-0.697**	-1.826***
	(0.375)	(0.354)	(0.474)
Growth Rate (Lead)	2.634**	9.674***	2.224*
	(1.317)	(1.366)	(1.180)

Long-Term Debt	-0.000	0.002***	-0.003***
	(0.000)	(0.000)	(0.001)
Total Assets	0.002***	0.000	0.003***
	(0.000)	(0.000)	(0.000)
Debt in Current Liabilities	0.013***	0.013***	0.014***
	(0.001)	(0.001)	(0.002)
TQ	-4.073***	-3.745***	-4.607***
	(0.236)	(0.229)	(0.384)
Observations	319,188	130,312	188,876
R-squared	0.072	0.042	0.064
Number of firms	33,008	11,395	21,613

This table shows the random-effect regression results for CCC (the dependent variable) and a set of independent variables that contain market share and dummy controls for each year (1962 to 2017) and each country. Standard errors are clustered at the firm level and are presented in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Interestingly, the relationship is much stronger for firms operating outside the US than those operating in the US, in line with the prediction that market power is utilized for saving working capital in economies with greater credit constraints.

We use the Global Financial Crisis of 2008 as a breaking point in our estimated model. Given that credit constraints have become stronger after the crisis, we can examine how this change affected the relationship between market power proxies and CCC. Table 5 shows the results of the regression which also include interaction variables of Market Share with GFC (a dummy variable that gets the value 1 after 2008 and 0 otherwise). We repeat the regression with or without year dummies for US and non-US firms. Model (1) is conducted on the entire sample, and Models (2) and (3) are conducted on US and other countries, respectively. We

observe that the crisis (model 1) strengthened the relationship between market power and CCC. However, when distinguishing between the US and non-US firms, we see that the effect is stronger and statistically significant only for firms outside the United States of America. This finding confirms that the crisis significantly affected the credit availability of firms mostly operating outside the United States of America.

Table 5: CCC and Market Power before/after the global financial crises

Variables	All Firms	US	Others
	(1)	(3)	(5)
Market Share	-7.524***	-4.333*	-8.799***
	(1.614)	(2.308)	(2.013)
GFC*Market Share	-5.315***	-0.710	-5.842***
	(0.967)	(2.210)	(1.058)
Sales	-0.003***	-0.002***	-0.005***
	(0.000)	(0.000)	(0.000)
Industry Sales	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)
Growth Rate (lag)	-1.769***	-0.424	-1.933***
	(0.404)	(0.332)	(0.529)
Growth Rate (Lead)	2.575**	9.742***	2.155*
	(1.286)	(1.361)	(1.144)
Long-Term Debt	-0.001	0.002***	-0.003***
	(0.000)	(0.000)	(0.001)
Total Assets	0.002***	0.000	0.003***
	(0.000)	(0.000)	(0.000)

Debt in Current Liabilities	0.015***	0.013***	0.016***
	(0.001)	(0.001)	(0.002)
TQ	-3.528***	-3.561***	-4.006***
	(0.227)	(0.227)	(0.366)
Control variables	No	No	No
Observations	319,188	130,312	188,876
R-squared	0.075	0.053	0.062
Number of firms	33,008	11,395	21,613

This table shows the random-effect regression results for CCC (the dependent variable) where the independent variables contain the market share. GFC is a dummy variable that takes the values of 1 after the financial crises (>2008), and GFC*Market Share and GFC* Competition Index are the interaction variables. All regressions include dummy variables for year and country. Standard errors clustered at the firm level and are presented in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

The relationship between market power and CCC may depend on whether CCC is positive or negative; if a firm has a negative CCC and experiences sales growth, then it would generate cash. In this case, further reductions in the terms of payment may be less appealing than focusing management effort on bringing additional revenue (for example, Amazon's tremendous growth can be partly explained by its negative CCC; if the company stops growing, then it may face a cash reckoning). Therefore, we report the previous regression now by introducing interaction variables—multiplying the sign of the lagged CCC (negative or positive) by the market power proxies (market share and competition index). It must be noted that there is a one-year time difference between the explained variable CCC and the one used for constructing the interaction variable. Table 6 shows the results of these regressions. Model (1)

shows the results for the entire sample. We observe that there is a statistically significant inverse relationship between market share and CCC both in the negative and positive domains. However, this relationship is much stronger in the negative domain. Firms with a negative CCC tend to exhaust their market power completely in order to reduce the working power. This finding also holds when we distinguish between the US and the other countries. However, in the US, the relationship between CCC and market share is statistically insignificant when CCC is in the positive domain. While the results in Table 4 indicated an insignificant relationship between market power and CCC in the US, we discover a significant relationship in the US only when CCC is in the negative domain.

Table 6: Relationship between negative or positive CCC and Market Power

Variables	All Firms	US	Others
	(1)	(2)	(3)
Neg. CCC*Market Share	-53.361***	-44.591***	-58.085***
	(2.492)	(3.899)	(3.013)
Pos. CCC Market Share	-7.765***	-0.943	-11.604***
	(1.537)	(2.251)	(1.875)
Sales	-0.003***	-0.001***	-0.005***
	(0.000)	(0.000)	(0.000)
Industry Sales	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)
Growth Rate (lag)	-1.707***	-0.700**	-1.821***
	(0.373)	(0.353)	(0.472)
Growth Rate (Lead)	2.628**	9.670***	2.219*
	(1.314)	(1.363)	(1.177)

Long-Term Debt	-0.000	0.002***	-0.003***
	(0.000)	(0.000)	(0.001)
Total Assets	0.002***	0.000	0.003***
	(0.000)	(0.000)	(0.000)
Debt in Current Liabilities	0.013***	0.013***	0.014***
	(0.001)	(0.001)	(0.002)
TQ	-4.028***	-3.720***	-4.551***
	(0.235)	(0.229)	(0.382)
Controls	Yes	Yes	Yes
Observations	319,188	130,312	188,876
R-squared	0.083	0.052	0.0742
Number of firms	33,008	11,395	21,613

This table shows the relationship between CCC and market power when CCC is in the negative and positive domains. The independent variable is CCC. We use two interaction variables: Negative (Positive) lagged CCC * Market Share that takes the Market Share value if CCC is negative (positive), and zero otherwise. All regressions include year and country dummies. Standard errors clustered at the firm level and are presented in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

We further investigate the difference between the behavior of firms with negative and positive CCC by considering the structural break in GFC. Table 7 shows the regression results when adding two additional interaction variables. We multiply each of the interaction variables (Neg. CCC/Pos. CCC * Market Share) with the dummy variable GFC. The regression results clearly show that, prior to the GFC, US and non-US firms with a negative CCC used their market power to shorten the CCC. Non-US firms with a positive CCC utilized their market

power to shorten the CCC less strongly than those with a negative CCC. However, the GFC strengthened the utilization of the market power only for the non-US firms with a positive CCC. The GFC had an insignificant effect on US and non-US firms with a negative CCC.

Table 7: Relationship between negative or positive CCC and Market Power before/after the global financial crises

Variables	All Firms	US	Others
	(1)	(3)	(5)
Neg. CCC*Market Share	-54.770***	-48.789***	-58.241***
	(2.579)	(3.697)	(3.287)
Pos. CCC Market Share	-5.495***	-2.284	-6.727***
	(1.595)	(2.270)	(1.992)
GFC*Neg. CCC*Market Share	2.326	5.444	3.649
	(2.942)	(3.960)	(3.418)
GFC*Pos. CCC Market Share	-5.455***	-1.318	-5.974***
	(0.976)	(2.255)	(1.067)
Basic Controls	Yes	Yes	Yes
Year dummies and Country dummies	Yes	Yes	Yes
Observations	319,188	130,312	188,876
R-squared	0.085	0.064	0.073
Number of firms	33,008	11,395	21,613

This table shows the random-effect regression results for (the dependent variable) and a set of explanatory variables showing the interaction between negative or positive lagged CCC (dummy variables) and market share. Two other explanatory variables are these interaction

variables times GFC, which take the value of 1 after the financial crises (2008), and zero otherwise. All regressions include year and country dummies. The basic controls are Sales, Industry Sales, Growth Rate (lag), Growth Rate (lead), Long-Term Debt, Total Assets, Debt in Current Liabilities, and Tobin's Q. Standard errors clustered at the firm level and are presented in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

4 Conclusions

This study highlights the significance of CCC and OWC. Most finance models concentrate on trade credit from receivables or account payables, and a separate strand of operations literature focuses on production efficiency and the minimization of inventories under different constraints. We argue that CCC is important because it uncovers complements to fixed assets; these comprise investments that play a significant role in enabling a company to generate financial returns. Working capital investment is a neglected area of financial economics; the dynamic approach considered in this study answers fundamental questions associated with the working capital investment.

First, we build a dynamic general model of working capital management, based on the assumptions that companies are perennial sellers with built-in capital investments and that operating margin is invariant to changes in the terms of sales and payment (DSO and DPO). As perennials sellers, companies seek to minimize the CCC, similar to profit maximization. Under asymmetric financial constraints, firms may extend trade credit; otherwise, they use their market power to extract value from the supply chain. We test this value-extracting behavior using 319,188 worldwide firm-year observations, exploiting the GFC as an exogenous shock to the ability of companies of all sizes to issue debt (and equity). We find that the financial crisis strengthened the relationship between market power and CCC. When distinguishing between the US and non-US firms, we observe that the effect is stronger and statistically

significant for firms operating outside the United States of America. Thus, we show how the credit constraints are more binding outside of the American context. Our findings, robust to different specifications, reaffirm the view that the crisis had a significant effect on credit availability worldwide. We posit that companies around the world must consistently improve working capital management—a cover against large credit-market shocks.

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Internationalization of Digital Platforms and Ecosystems:

The Transaction Cost Perspective

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Internationalization of digital platforms and ecosystems: The Transaction Cost perspective

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ABSTRACT

This study takes Transaction Costs Theory as the core to explain the transaction costs that arise when enterprises build platforms due to different delivery methods of goods or services, and creates the value of the platform ecosystem through the dynamic process of integrating internal and external resources. The digital platform connects and integrates internal and external resources to create a multilateral market and extend the development of cross-border platforms. The establishment of the company has a choice of corporate and market governance methods. It is generally believed that the enterprise and the market are two relative governance methods. Reasons for adopting different governance methods depending on which way the transaction costs are comparatively low.

Extending the Transaction Cost Theory, this research proposes the ternary method (information flow, logistics, online and offline integration) of product and service deliveriesin the digital platforms, and analyzes the different bottlenecks and uncertainties involving indifferent offering flows. Issues such as asset exclusivity and transaction frequency point out the definition and assumption that traditional enterprises will have interfering variables in transactions. It enables enterprises to be clearer about the choice of platform operation methods and the direction of business expansion, and further advocates that the operation methods can be mixed instead of running in a single mode, sharing ecosystem resources for complementary industries, user transactions and matchmaking activities between participants.

A dynamic evolutionary view on digital platforms and ecosystems has therefore proposed in this research, as it is based on the development foundation of module sharing, which is faster and easier than the traditional service-oriented enterprises. This research also deeply explores the reasons why platform enterprises cannot proceed quickly. The research results emphasize the regional logistics factor (cross-regional distribution) in the platform. Enterprises play a pivotal role in the process of cross-regional development, so the solution to regional goods or service delivery is an important mode of platform development. This research focuses on the establishment of digital platform enterprise ecosystems and various bottlenecks in the development of transaction costs, and after the formation of the management concept. Convert its application into a patented style, and finally develop it into a platform enterprise operation. The actual operation of the platform will be described in the form of patent protection after academic and practical enterprise operation. The research results will bring considerable contribution and enlightenment to the development, internationalization, strategic theories and practices of digital platforms and ecosystems.

Keyword：Digital platform and ecosystems, transaction costs theory, location factor, service delivery

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The Impact of Emergency Risk on Consumer Acceptance of New Products

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Extended Abstract

Title: The impact of emergency risk on consumer acceptance of new products

1. Introduction

New products or technologies help firms gain a competitive advantage. Unfortunately, most new products are not accepted by consumers after they enter the market and end up as failures (Gourville, 2006). A growing body of research examining the antecedents of new product acceptance suggested that it is mainly related to consumers (Noseworthy, Di Muro, & Murray, 2014), market situation (Li, Jervis, & Drake, 2015), and the characteristics of the new product itself (Campbell & Goodstein, 2001), while the influence of social risk factors are largely neglected. Given the fact that daily life is always accompanied by emergency risks, such as floods, hurricanes, fires, or major traffic accidents, it is necessary to explore what spillover effects such external factors as emergency risk may have on consumers' new products acceptance.

2. Literature and Framework

Classical risk theory assumes that the core characteristics of risk events are Dread and Unknown, and that both these two characteristics will elicit strong negative emotions (Slovic, 1987). For example, the serious consequences brought by risks (Dread) will trigger fear, while the uncertainty of risks (Unknown) will cause anxiety. At the same time, individuals' risk/benefit perceptions rarely depended on the objective risk and benefit attributes of the event, but rather on intuitive impulses (mainly emotions) formed in a short period of time (Finucane et al., 2000; Loewenstein et al. 2001), this pattern has evolutionary significance and is called the Affect Heuristic. Previous risk studies found that higher negative emotions implied danger signals, which simultaneously increased risk perceptions and reduced benefit perceptions (Siegrist, 2021; Skagerlund, Forsblad, Slovic, Västfjäll, 2020). Acceptance of a new

product can be viewed as an attitude, depending on the consumer's tradeoff between the cost and gain towards the consumption goal. Therefore, risk perception (cost) and benefit perception (gain) are important variables affecting the acceptance of new products. Extant literatures in genetically modified foods (Siegrist & Hartmann, 2020) and autonomous vehicles (Liu et al., 2018) have found that high risk (low benefit) perception inhibits acceptance, whereas low risk (high benefit) perception promotes acceptance. In this regard, we speculate that the overall change in risk/benefit perception caused by external events will spillover to consumers' perception of new products and then affect their acceptance behavior. Taken together, this study makes the following hypotheses:

Hypothesis 1. Emergency risk would inhibit new product acceptance;

Hypothesis 2. This effect is driven by negative emotion and risk/benefit perception as successive mediators.

3. Methods and Results

Study 1 (an online-based study) tested the main hypothesis and demonstrated that even imagining experiencing a flood attenuated new product acceptance. Participants (Undergraduate Students, $n = 162$) were randomly assigned to the risk group and control group. The risk group watched a three-minute video of a flood and imagined that their city is experiencing the flood at the moment; the control group watched another three-minute science video about flooding. Later, participants evaluated their acceptance of the five new products (such as a new camera or a new headset) on a 7-scale (1 = completely rejected, 7 = completely accepted). As predicted, the acceptance of new products was significantly lower in the risk group than in the control group, ($Mrisk = 3.56$ vs. $Mcontrol = 4.62$, $p < .003$, *Cohen's d* = 0.55), hence H1 is supported.

Study 2 (a field study) set out to replicate the findings of study 1 and further explored the explanatory mechanism. On July 20, 2021, Henan Province of China was hit by a heavy rainstorm, which resulted in a severe flood. It was the flood with the highest rainfall recorded in local history (Xia, 2021). This provided us with a great, naturalistic opportunity for field experiments. In Study 2, data were collected through the Internet within 1-2 weeks after the flood (General Residents, $n = 579$), and participants were divided into the risk group ($n = 251$) and the control group ($n = 239$) according to whether there was a flood in their city and their psychological distance to the disaster. This study collected participants' negative emotions and measured them with a Discrete Emotions Questionnaire developed by Harmon-Jones et al. (2016), including 5 negative emotions. Risk and benefit perception were measured by the classical method of Finucane et al. (2000), including 12 common life risks. The measure of new product acceptance was adopted from the scale by Liu et al., (2018) with 3 items. All measurements were made using a 7-point scale.

As predicted, the new product acceptance was significantly lower in the risk group than in the control group ($Mrisk = 4.18$ vs. $Mcontrol = 5.03$, $p < .001$). Next, the bias-corrected bootstrapping method based on 5000 bootstraps and 95% confidence intervals (Preacher & Hayes, 2008) was used to test the mediating effect. Confirmatory analysis shows that the model has a better fit to the data, and there was good discriminant validity among variables ($\chi 2 = 1320.01$, $df = 543$, $SRMR = 0.07$, $RMSEA = 0.05$, $CFI = 0.92$, $TLI = 0.91$). The results revealed that the indirect effects of the two pathways: (1) “emergency risk - negative emotions - risk perception - acceptance” ($\beta = 0.12$, 95% CI = [0.09, 0.17]); and (2) “emergency risk - negative emotions - benefit perception - acceptance” ($\beta = 0.08$, 95% CI = [0.06, 0.11]) were both significant. The two pathways together explained 64.25% of the total effect, and thus H2 is supported.

4. Discussion

In conclusion, this study provided evidence that social risk factors have spillover effects on new product acceptance (i.e., reduce consumer acceptance of new products). This is because emergency risk will amplify/reduce consumers' general risk/benefit perception through negative emotions, and then spillover to the perception of new products, and eventually affect downstream acceptance behavior. This study set out an initial exploration to reveal the external impact of emergency risk on the acceptance of new products, suggesting that enterprises should not ignore social risk factors when launching new products, even if there exist little connections between emergency risk and the new products.

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Research on the Influence of Media Pressure on Chinese Enterprises' Cross-border M&A - Based on the Perspective of Senior Executives' Regulatory Focus

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媒体压力对中国企业跨国并购成败的影响研究——基于高管调节定向的视角

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摘要

媒体作为关键的外部治理机制，能够为跨国并购的参与方及其利益相关者提供信息，从而对并购成败产生影响。本文基于利益相关者理论，研究媒体压力对中国企业作为收购方企业进行并购成败产生的影响；此外，高层管理者作为制定和执行跨国并购的决策者，在其面对媒体压力时，个人特质（调节定向）可能会对并购成败产生进一步影响。研究结果或许对理解媒体压力以及高管调节定向在跨国并购中发挥的作用有一定的帮助。

关键词：中国企业, 媒体压力, 利益相关者，跨国并购, 调节定向

一、引言

改革开放和“一带一路”的不断深入，中国企业加快对外扩张步伐，当前特点为并购数量增加，规模缩小，结构优化，投资领域广泛，民营企业活跃等。“5G”时代的到来，互联网普及加速，网络媒体也正向更科技，更开放和更实效的方向发展，成为群众获取讯息的重要来源，同时在公司监督和治理中扮演重要角色（陈泽艺等，2017；杨道广等，2017；应千伟等，2017），通过收集媒体负面和非负面（正面和中性）报道数量，研究其在收购方企业跨国并购成败中发挥的作用。调节定向作为一个心理学概念，现广泛研究于企业管理、人力资源管理、组织行为学等公司层面（毛畅果，2017；秦佳良和张玉臣，2020；田喜洲等，2020），拓展研究不同的调节定向（即促进定向和预防定向）会在媒体压力和收购方企业进行跨国并购中起到如何的调节作用。

本文可能的贡献有如下两点：一方面，以往研究较多关注于收购溢价、并购绩效等（Paul & Wei，2018；Md & David，2020），本文从利益相关者理论出发，拓宽了媒体压力对收购方企业跨国并购成败的影响研究；另一方面，国内多数学者以往对调节定向的测度方法是问卷调查和实验操纵，本文对英文版调节定向词典使用 Brislin 的经典回译模型得出中文版词典，对企业年报或半年报中经营讨论与分析部分统计反映调节定向的词汇数量，研究成本降低，耗时缩短。

二、理论分析与研究假设

（一）媒体压力对收购方企业跨国并购成败的影响

Freeman(1984)提出利益相关者概念，包括员工、客户、股东、债权人、供应商、社区公众、政府机构、媒体等。企业目标不单单是实现股东利益最大化，而是企业价值最大化，因为企业发展需要的是所有利益相关者投入的资源，包括股本、债务、人力资源、市场资源、公共设施、运营环境、媒体宣传等等（张兆国等，2012）。因此，企业在做出类如跨国并购的重大决策前，应当考虑利益相关者行为，有利于其发展，从而提升企业竞争优势（魏伟等，2012）。

在并购公告发布前后，媒体报道有助于消除收购方企业与其利益相关者间的信息不对称。利益相关者通过报道对企业行为进行了解，并会对并购表达意见（Olga, 2020）。面对正面报道（慈善活动、志愿服务、社区参与、劳动平等、环境友好等），会对企业产生承担经济和社会责任的正面印象，符合对其企业公民身份的期望，对并购表达支持或者保持中立，因而提高并购成功概率(Bettinazzi & Zollo, 2017)；面对负面报道（违法违规、侵害中小股东权益、环境污染等），会产生违规违纪的负面印象，有损其合法权益，因此会提出质疑，组织罢工，或由政府强制终止等，导致失败可能性增加（Shea & Hawn, 2019）。负面报道可能比正面报道影响更加深远，是由于利益相关者更加关注于负面报道，会产生强烈的观察者反应(Olga, 2021)。由此，本文提出以下假设：

假设 1：媒体压力会降低收购方企业跨国并购成功的概率。

（二）高管调节定向的调节作用

Higgins（1997）提出调节定向(Regulatory Focus)理论，划分为促进定向(Promotion Focus)和预防定向(Prevention Focus)。偏促进定向的人关注发展、进步和成就，追求最优状态，渴望能够成为理想的自我，动机是取得成就，快乐来自有所收获；而偏预防定向的人关注安全、保护和风险，追求稳妥状态，预防不能成为应该的自我，动机是警惕风险，快乐来自没有损失（姚琦和乐国安，2009）。

面对媒体压力引发利益相关者行为时，不同调节定向型高管有着不同的认知评价，并采取不同的应对策略，影响利益相关者的态度转变。偏促进定向型高管倾向于采取社会导向性的利益相关者战略，表现为强调满足环境、社区、消费者的需求，如参与公益，提高福祉，环境保护等，积极回应政府、民众、消费者等外部利益相关者的倡议，甚至超前履行社会责任(Daniel et al., 2020)。因此当其深入了解企业行为时，倾向于转变反对态度为中立或者支持。此外，股东、债权人、员工等利益相关者对并购后长期绩效保持乐观，并受外部态度变化影响，为不丧失潜在收益，也较为容易转变态度，进而有利于并购顺利进展；而偏预防定向型高管倾向于采取治理导向性的利益相关者战略，表现为强调对公司治理的规定，代理成本最小化以及股东利益最大化，如限制高管薪酬，改善董事会股东间的沟通与监督，增加财报和决策透明度，强有力的风险管控等，但被动回应以股东为代表的诉求，采取措施不够迅速到位（Daniel et al., 2020），因此实施目的和时机易受怀疑，并购态度变化

不够明显，依然保持反对。此外，政府、民众等利益相关者的提议也没及时回应，态度也无明显转变，甚至反对加剧，从而不利于并购进行。由此提出以下假设：

假设 2：偏促进定向型高管会弱化媒体压力对收购方企业跨国并购成功的消极影响。

三、研究设计

（一）样本选择与数据来源

本文选取中国研究数据服务平台中海外并购数据库的中国上市公司，在 2008 年 1 月 1 日后发布首次并购公告，并在 2020 年 3 月 13 日前得到结果的跨国并购事件作为初始样本，上市公司的新闻报道数据和半年报、年报中经营讨论分析的数据材料分别来自中国上市公司财经新闻数据库和管理层讨论与分析数据库。为剔除异常数据，删除并购前处于 ST 或 ST*状态、金融保险类行业、报道等信息缺失、被并购企业为控股公司或位于中国、百慕大、开曼群岛和英属维尔京群岛的样本，最终得到 488 家中国上市公司进行 834 次跨国并购的研究样本。

（二）变量说明

被解释变量为收购方企业跨国并购的成功，并用 AOMAS（The Success of Acquirer’s Overseas M&A）来表示。解释变量为媒体压力，媒体相对负面报道数量（即负面报道数量减去正面报道数量）与总体报道数量的比值（才国伟等，2015）。根据是否包含中性报道，定义为：MedPress1=(负面报道数量-正面报道数量)/(正面报道数量+中性报道数量+负面报道数量)；MedPress2=(负面报道数量-正面报道数量)/(正面报道数量+负面报道数量)。调节变量是高管调节定向（RegFocus），根据 Gamache et al.（2015）的英文版词典，运用 Brislin (1970, 1976)的经典回译模型得到中文词典，计算半年报或年报中经营分析与讨论内容中促进定向词汇占比减去预防定向词汇占比，该数值>0 时，定义为偏促进定向型高管；反之，则为偏预防定向型高管。控制变量主要包括：国家层面为母国与东道国间的距离，体现在行政、经济、地理、知识、政治、全球关联性、文化、民主、金融等九个维度(Berry et al., 2010)；收购方企业层面包括媒体关注、东道国成功经验、行业成功经验、企业成功经验以及性质是否为国有企业；被并购企业层面包括是否为上市企业、行业是否为战略型（能源、矿产、钢铁、原材料等资源、高科技）；以及省份固定效应（收购方企业注册地址）。

（三）检验模型

本文构建如下模型检验研究假设：$AOMAS=\alpha_1+\alpha_2ConVaris+\Sigma Province+\varepsilon_i$；$AOMAS=\alpha_1+\alpha_2MedPr\text{-}ess+\alpha_3ConVaris+\Sigma Province$；$AOMAS=\alpha_1+\alpha_2Medpress+\alpha_3RegFocus*MedPress+\alpha_4RegFocus+\alpha_5ConVaris+\Sigma Province+\varepsilon_i$。其中 MedPress 为媒体压力，RegFocus 为调节定向，ConVaris 为控制变量，ΣProvin-

ce 为控制省份效应，ε_i 为残差项。

四、实证结果分析与稳健性检验

（一）描述性统计

为减弱异常值影响，对所有连续型变量进行首尾 1%的缩尾处理，描述性统计如表 1 所示。

表 1 描述性统计

变量	样本数	均值	中位数	标准差	最小值	最大值	极差
AOMAS	834	0.589	1	0.492	0	1	1
MedPress1	834	-0.181	-0.189	0.276	-0.895	0.500	1.395
RegFocus	834	0.049	0.036	0.043	0.001	0.240	0.239
MedAtten	834	0.959	0.979	0.060	0.667	1	0.333
CounExp	834	1.188	1.099	0.970	0	3.332	3.332
IndExp	834	2.040	2.079	1.167	0	3.912	3.912
FirmExp	834	0.106	0	0.274	0	1.099	1.099
AcqStatus	834	0.299	0	0.458	0	1	1
TarStatus	834	0.137	0	0.344	0	1	1
TarInd	834	0.601	1	0.490	0	1	1

AOMAS 中位数为 1，说明一半以上并购结果为成功。MedPress1 均值和中位数分别为-0.181 和-0.189，意味 50%以上企业跨国并购前一季度负面报道数量低于正面报道数量，RegFocus 的均值和平均数分别为 0.049 和 0.036，说明超过二分之一的企业年报或半年报中促进定向较预防定向词汇占比较大，但不同企业间差异不大。其他控制变量在不同企业和年度中也存在明显差异。

（二）媒体压力对收购方企业跨国并购成败的影响以及高管调节定向的调节作用

表 2(2)回归显示：MedPress1 与 AOMAS 在 1%下显著负相关，说明收购方企业首次发布公告前一季度的媒体压力不利于并购成功，且每增加 10%，则并购成功概率下降 5.46%。其他变量系数与以往研究保持一致，假设 1 得到实证支持。(3)回归表明：RegFocus 和 MedPress1 的系数分别在 5%和 1%下显著，RegFocus×MedPress1 系数在 1%下显著为正，这表示随着媒体压力增加，并购成功概率降低，但偏促进定向型高管团队能够减弱媒体压力的消极影响，假设 2 得到验证。

表 2 回归结果分析

	(1) AOMAS	(2) AOMAS	(3) AOMAS	(4) AOMAS	(5) AOMAS	(6) AOMAS	(7) AOMAS
AOMAS							
MedPress1		-0.546***	-0.439**				
		(0.198)	(0.19)				
MedPress2				-0.390***		-0.286**	
				(0.14)		(0.132)	
MedPress3					-0.413***		-0.328**

					(0.145)		(0.151)
RegFocus			5.697***			5.661***	5.392***
			(1.803)			(1.774)	(1.818)
RegFocus×			24.112***				
MedPress1			(6.687)				
RegFocus×						17.975***	
MedPre2						(4.471)	
RegFocus×							16.961***
MedPress3							(6.159)
_cons	0.017	-0.42	-0.643	-0.41	-0.21	-0.684	-0.548
	-1.505	-1.476	-1.5	-1.469	-1.484	-1.429	-1.622
ConVaris	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	825	825	825	825	825	825	825
Pseudo R^2	0.035	0.039	0.055	0.039	0.038	0.053	0.051
Province	Yes	Yes	Yes	Yes	Yes	Yes	Yes

注：*、** 和***分别表示10%、5%和1%的显著性水平；括号中为经过公司以及行业聚类调整后回归系数的稳健标准误。

（三）稳健性检验（由于篇幅原因，列举部分）

（1）媒体压力变量测度方法变换以及统计范围缩小

避免变量测度方法选取及统计范围的误差，采用不包含中性报道(才国伟等，2015）以及只包含转载性报道（包含中性转载性报道）构建的 MedPress2 和 MedPress3(陈泽艺等，2017)来检验上述假设，其余变量和回归方法同上。表 2(4)和(5)中媒体压力的系数均在 1%下显著为负，(6)和(7)中媒体压力、高管调节定向以及交乘项的系数分别在 5%、1%和 1%下显著为负、正、正，在变换测度方法和缩小统计范围后，系数符号和显著性水平没有发生明显变化，上文的基准回归结果是稳健的。

（2）内生性检验——工具变量法

实证可能存在双向因果的内生性问题。媒体压力与并购成败的负相关不一定是源于媒体压力的增加导致并购失败，也可能是并购的企业更易引起媒体关注，增加负面以及非负面新闻的报道概率。因此，选取行业年度平均媒体压力（MedPreAve）作为工具变量（王云等，2017；杨道广等，2017；应千伟等，2017），与单个企业并购成败并无明显的直接关系，但却会影响其媒体压力。采用 IVProbit 进行第一阶段的 OLS 和第二阶段的 Probit 回归（刘一伟和汪润泉，2015；陆施予和李光勤，2018）。

五、结论与启示

当收购方企业跨国并购前面临的媒体压力较小时，利益相关者表现出积极的支持行为，并购成功概率提升，反之，媒体压力较大时，利益相关者表现出消极的反对行为，并购失败可能性增加。进一步，偏促进定向型高管面对媒体压力倾向于采取社会导向性的利益相关者战略，易获得主要利

益相关者的支持，从而弱化媒体压力的消极影响；而偏预防定向型高管往往会采取治理导向性的利益相关者战略，不易获得绝大多数利益相关者的支持，从而强化其消极影响。

本文仍存在一些不足和缺陷，后续可进行如下研究：分析纸质媒体压力与网络媒体压力的异同；分析媒体报道的具体内容形成的媒体压力；验证中文版调节定向词典的可靠性以及具体分析高管调节定向的长期性和情境性等。

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Quality of Bilateral Investment Treaties and Overseas Business Performance of Chinese Multinational Enterprises

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Quality of Bilateral Investment Treaties and Overseas Business Performance of Chinese Multinational Enterprises

Abstract

This study examines how the quality of bilateral investment treaties affects the overseas business performance of emerging market multinational enterprises in terms of investment facilitation, investment protection, and market access by using the data on 554 overseas subsidiaries of Chinese manufacturing multinational enterprises from 2011 to 2019. It is found that while the overall quality of bilateral investment treaties contributes to the overseas business performance of Chinese MNEs, this positive effect comes more from investment protection than from investment facilitation and market access. The promotion effects of BITs and the dominant effects of market access, investment protection, and investment facilitation vary significantly across countries at different levels of development and across Chinese MNEs with different ownership. Finally, high-quality BITs can improve the overseas business performance of Chinese MNEs by reducing the uncertainty of investment environment in the host country.

Keywords: Bilateral investment treaties, investment facilitation, investment protection, market access, multinational enterprises, overseas business performance

JEL classification codes: F13, F21, F55

1. INTRODUCTION

A bilateral investment treaty (BIT) is a legal document designed to encourage, promote, and protect investment between countries. It mainly covers terms on market access, investment protection and investment facilitation (UNCTAD, 2000). Due to the lack of a set of uniform international investment rules and regulations in the global governance system, BITs have effectively become the most important and institutionally binding framework for regulating mutual investment between two countries. However, there has been limited research on how the quality of BITs affects the overseas business performance of Chinese multinational enterprises (CMNEs)?

The existing studies mostly focus on the effect of BITs on the inward foreign direct investment (FDI) in China (Cheng and Ruan, 2004; Zhang, 2009). Most scholars argue that BITs will increase foreign investors' confidence in the investment environment of China and can lead to more inward FDI. In recent years, how BITs affect the outward FDI of CMNEs has become a new research focus because of the accelerating pace of Chinese firms exploring the international market. Luo et al. (2010), Zong et al.(2012) and Zhang (2013) find that BITs are conducive to regulating the host countries' institutional environment, reducing institutional barriers for Chinese firms to go abroad, and promoting outward FDI. In addition, Li et al. (2014), Wei (2018), and Deng et al. (2019) highlight the importance and heterogeneity of host country institutional environment when studying the impact of BITs on the outward FDI of Chinese firms. Some scholars have argued that out of all BITs signed by China, those with

developing countries under the Belt and Road Initiative have the most significant impact on outward FDI of Chinese firms (Zhang and Fei, 2020).

However, an implicit assumption of the previous studies is that BITs and their effects on the outward FDI of Chinese firms are homogeneous. These studies often use the number of BITs or a dummy variable as a measure of a country's BIT status with a partner country, thus ignoring the heterogeneity of BIT quality. This limitation raises a concern because the contents of BITs depend heavily on the bilateral relationships between countries, as well as the political, economic and social systems of countries involved. For the same reason, the heterogeneity also means that different BITs are likely to have very different focused areas including market access, investment protection, and investment facilitation. Hence, it is crucial to have a more complete and realistic understanding of BITs from the points of view of both international investors and policy makers. Yang et al. (2016) examined the effects of BITs on the outward FDI of CMNEs, but they only focused on the general features of BITs without looking into the different effects of specific BIT dimensions on the firm performance.

With the implementation of China's Go Global strategy since the beginning of this century, more and more Chinese firms are engaging in multinational investments and operations. The overseas business performance of MNEs is influenced by technological innovation capability and asset specialization of their parent companies (Liu et al., 2016; Donbesuur et al., 2020; Daveik et al., 2021). Wu et al. (2019), Han (2020), and Wang et al. (2020) examined the determinants of MNEs' overseas business performance from the perspectives of host country institutional environment and cultural distance between countries, respectively. Previous

studies on the determinants of overseas business performance have mainly focused on the characteristics of MNEs and host country investment environment without considering bilateral institutional arrangements specific to the pair countries.

Our study contributes to the emerging market MNEs literature as follows. First, it differentiates BITs by three main dimensions when estimating the BIT quality on overseas business performance of CMNEs. This categorization allows us to study explicitly the influencing mechanisms of BIT quality on the overseas business performance of CMNEs. Second, the empirical analysis of this study is based on one theoretical model we have developed. This theoretical model provides a conceptual structure to frame the intrinsic relationship between the key variables with economic rationale, serving as a baseline guidance for the empirical investigations.

The remainder of paper proceeds as follows. Section 2 sets out the theoretical background with a model to motivate the baseline expectations for empirical analysis. Section 3 describes the empirical estimation design and the data. Section 4 presents and analyzes the empirical results. Section 5 concludes the paper and discusses policy implications.

2. THEORETICAL BACKGROUND

A BIT is an institutional framework signed between countries to regulate international investment in each other's territory. Although the content of the specific provisions of the BIT varies greatly as a result of the outcomes of negotiations between countries, a BIT is constructed

to cover three areas including market access, investment protection, and investment facilitation (UNCTAD, 2000).

Market access in BIT refers to the extent to which a country's domestic market allows foreign capital to enter. According to the rules of World Trade Organization (WTO), the evaluation criteria of the degree of market access is to examine whether the domestic market gives national treatment, most-favored-nation treatment, fair and equitable treatment to enterprises of other countries. That is, the more complete the treatment principles covered by the BIT content, the higher the degree of market access for the host country. In addition, the high degree of market access is conducive to foreign enterprises entering a wider market area and expanding a richer scope of business in the host country. These provide a more convenient and fair policy environment for overseas production and management of MNEs in host countries. Furthermore, a high degree of market access allows multinational investors to obtain stable growth expectations in the host market (Shige and Eric, 2011).

Investment protection in BIT ensures that the property and earnings of multinational investors are protected from legitimate political risks by mutual legal undertakings and guarantees between the countries of agreement. Investment protection covers the expropriation restriction conditions, damages, dispute settlement, and other provisions. The better the content of investment protection provisions, the more effective the protection of assets and business returns invested by MNEs in the host country, and it reduces the risk of damage. The provisions for investment protection offer additional institutional safeguards for multinational investors to

make free transfers of investment profits and boost the confidence of MNEs in the host country (UNCTAD, 2000).

Investment facilitation in BIT creates a harmonized, transparent, and predictable environment for mutual investment by simplifying procedures and formalities and harmonizing of laws and regulations between the countries of agreement. Specifically, the more comprehensive the provisions of investment facilitation, the more simplified the investment procedures and formalities for MNEs in the host country. Besides, this approach reduces the comprehensive transaction costs, enhances the predictability of MNEs' investment and operation, and reduces the uncertainty risk in overseas markets.

The better the BIT provisions, the higher the quality standards. The higher level of market access, investment protection, and investment facilitation in the host country help to reduce the uncertainty of MNEs' business environment and operation in the host country.

Next, this study develops a simple model to explore how BIT quality affects MNEs' overseas business performance by reducing uncertainty in the host market. This study develops a simple model to explore how BIT quality affects MNEs' overseas business performance by reducing uncertainty in the host market. First, it examines the impact of MNEs' uncertainty in the host countries on their overseas business performance based on the theoretical model of Darby, Desbordes, and Wooton (2010). To consider an MNE with headquarters in its home country *m*, a production facility in a host country *s,* will generate a flow of after-tax profits in each period equal to π_{ms}. If it is to be assumed for now that there is no risk involved in MNEs' uncertainty in host countries, the present value of expected returns can be expressed as

$$EPV_{ms} = \frac{\pi_{ms}}{1-\delta} \quad (1)$$

where δ is the discount factor of the firm. However, an increased level of uncertainty in the host country can reduce MNEs' confidence, weaken their intentions to invest abroad, and affect the earnings of MNEs' overseas subsidiaries. Equation (1) can be re-written by combining the impact of uncertainty in the host country such that the expected present value of a foreign subsidiary is as follows:

$$EPV_{ms} = \frac{\pi_{ms}}{1-\delta+P_{ms}\cdot\delta} = \frac{\pi_{ms}}{1-\delta+(1-e_m^{\gamma})U_s\cdot\delta} \quad (2)$$

where P_{ms} is the subjective probability that home country m will stop making overseas investment in host country s. This can be modeled as $P_{ms} = (1- e_m^{\gamma})U_s$, where e_m is the MNE's experience of domestic institutional risk, e_m<1, γ>0, and U_s is the uncertainty degree of MNEs in the host country. The partial derivatives of (2) are

$$\frac{\partial EPV_{ms}}{\partial U_s} = -\frac{\delta\cdot(1-e_m^{\gamma})\cdot\pi_{ms}}{[1-\delta+(1-e_m^{\gamma})U_s\cdot\delta]^2} < 0 \quad (3)$$

Equation (3) shows that the expected returns of MNEs' foreign subsidiaries are negatively correlated with the uncertainty level of MNEs in the host country. Specifically, the lower the uncertainty level in the host country, the higher the operating performance of foreign subsidiaries.

Additionally, a high-quality BIT helps reduce the MNEs' investment uncertainty risk in the host country. Therefore, the following theoretical model is constructed:

$$U_S = a_0 - a_1 \cdot BIT_s + a_2 \cdot X_s \quad (4)$$

where BIT_s represents the BIT quality index signed with the host country, and *s*, X_s are the other factors affecting MNEs' uncertainty in the host country. As high-quality BIT reduces the uncertainty of MNEs in the host market by improving market access, investment protection, and investment facilitation, it can be seen that the partial derivatives of (4) are held for negative values, which can be modeled as

$$\frac{\partial U_S}{\partial BIT_s} = -a_1 < 0 \tag{5}$$

where $a_1 > 0$. Based on these studies, combining the effect of BIT quality on the uncertainty of MNEs in the host country, the expected present value of overseas subsidiaries in (1) is rewritten as

$$EPV_{ms} = \frac{\pi_{ms}}{1-\delta+(1-e_m^{\gamma})\cdot(a_0-a_1\cdot BIT_s+a_2\cdot X_s)\cdot\delta} \tag{6}$$

The partial derivatives for BIT quality index are

$$\frac{\partial EPV_{ms}}{\partial BIT_s} = \frac{a_1\cdot\delta\cdot(1-e_m^{\gamma})\cdot\pi_{ms}}{[1-\delta+(1-e_m^{\gamma})\cdot(a_0-a_1\cdot BIT_s+a_2\cdot X_s)\cdot\delta]^2} > 0 \tag{7}$$

Equation (7) shows that the expected returns of foreign subsidiaries are positively related to the BIT quality index. Specifically, the higher the quality of BIT, the more obvious is the improvement of MNEs' overseas business performance.

3. METHODS

3.1 Model design

To test the effect of BIT quality on MNEs' overseas business performance, a regression equation was established as follows:

$$Y_{ijt} = \beta_0 + \beta_1 BIT_{jt} + \sum_{m=2}^{4} \beta_m CTRF_{it} + \sum_{n=5}^{9} \beta_n CTRC_{jt} + \partial_{ij} + \mu_t + \varepsilon_{ijt} \quad (8)$$

where Y_{ijt} represents the overseas operating performance of company *i* from country *j* in year *t;* BIT_{jt} represents the level of BIT quality signed by the host country *j* with China; $CTRF_{it}$ represents the control variable of the enterprise level; $CTRC_{jt}$ represents the control variable of the country-level; ∂_{ij} represents the individual effect of the firm and host country; μ_t represents the time effect; ε_{ijt} denotes the random interference items of the model; β_0, β_1, β_m, β_n represent the estimated parameters.

3.2 Dependent variable

Overseas business performance

This study uses return on assets (ROA) and return on sales (ROS) separately to measure the overseas business performance of MNEs (Wang et al., 2020). Specifically, ROA is used for the benchmark regression tests while ROS is used for the robustness tests.

3.3 Independent variable

BIT Quality

It is based on the principle of constructing an investment clause index in free trade agreements (Lesher and Miroudot, 2006) by integrating the research methods of Chainsse and Bellak (2015) and Yang et al. (2016).

The specific measurement of BIT quality index is as follows. First, this study divides the BIT internal provisions into three major parts including market access, investment protection, and investment facilitation. In particular, market access covers national treatment, most-favored-nation treatment, and fair and equitable treatment. Investment protection includes expropriation, damages, transfer, dispute resolution, and umbrella clauses. Investment facilitation covers procedural facilitation and legal facilitation provisions. Second, individual module indexes are developed. Specific indicators within individual modules are measured. If the BIT contains an indicator, the value is equal to 1, otherwise 0. Then, a simple arithmetic average is used to calculate the individual module indexes. Finally, the BIT quality index is calculated by adding the market access, investment protection, and investment facilitation scores, which are calculated by applying simple averages (Table 1).

Table 1 The development of BIT quality index

BIT internal terms			Specific instructions	Min	Max
Market access	National treatment	National treatment	National treatment	0	1
		Exceptions	Restrictive conditions	0	1
	Most-favored-nation treatment	Most-favored-nation treatment	Most-favored-nation treatment	0	1
		Exceptions	Restrictive conditions	0	1
		Independence	Independence from similar international disputes	0	1
	Fair and equitable treatment	Fair and equitable treatment	Fair and equitable treatment	0	1
		Applicable principles	Domestic law, international law, international treaties	0	1
		Exceptions	Restrictive conditions	0	1
		Independence	Separate from other clauses	0	1
		Safety and Protection	Safety and Protection	0	1
Investment protection	Levy	Levy conditions	4 conditions for levy	0	1
		Compensation	Appropriate compensation	0	1
		Interest compensation	Payment of deferred interest	0	1
		Most-favored-nation treatment	Most-favored-nation treatment applies	0	1
	Damages	National treatment compensation	Granting national treatment	0	1
		Most-favored-nation treatment compensation	Granting Most-favored-nation treatment	0	1
		Better Principle	Beneficial for investors	0	1
		Special Principles	Special Principles	0	1
	Transfers	Transfer Conditions	Free transfers	0	1
		Exceptions	Restrictive conditions	0	1
		Subrogation	Subrogation	0	1
	Dispute resolution	Dispute Resolution Types	Dispute Resolution Types	0	1
		Exceptions	Restrictive conditions	0	1
	Umbrellas	Umbrellas	Umbrellas	0	1
Investment facilitation	Investment facilitation	Procedure convenience	Facilitation and services for people	0	1

	Institutional facilitation	Legal institutional protection for investment promotion	0	1

3.4 Control variables

In this study, the control variables are divided into firm- and country-level variables (Zong et al., 2012). Specifically, the firm-level factors include firm size, human capital, and ownership structure. Country-level factors include bilateral economic and trade relations, cultural distance and geographical distance between the BIT countries, and market attraction and economic stability of the host country. *Firm size* is measured by using the logarithm form of foreign subsidiaries' total assets. *Human capital* is measured by using the overall percentage of the bachelor's degree and above. *Ownership structure* is measured by using dummy variables. If the MNC is state-owned, the value is equal to 1, otherwise 0.

For the country-level factors, *the bilateral economic and trade relations* are measured by the total export and import between China and the host country as a percentage of the host country's total foreign trade volume. *Cultural distance* is measured with the formula proposed by Kogut and Singh (1988), which uses six dimensions including the rights distance, uncertainty avoidance level, individualistic tendency and so on. *Geographical distance* is measured by using a logarithmic value of the geographical distance between the capital of China and that of host country. Additionally, GDP growth rate is used to measure *market attraction of the host country*. Inflation rate in the host country is used to measure *economic stability of the host country*.

Geng and Li (2020) argued that Global Uncertainty Index (GUI) is easier to compare at the country-level, and it reflects the overall uncertainty level among countries better compared with the Economic Policy Uncertainty Index proposed by Baker, Bloom and Davis (2016). Therefore, we used GUI to measure *the level of uncertainty* in the host country.

3.5 Samples and data

The samples in the study were treated as follows. First, we selected a sample of manufacturing enterprises in China to ensure the stability of research results. Specifically, this study screened the industry codes of listed MNEs and the business scope of overseas subsidiaries, then preliminarily identified the names of manufacturing MNEs that had made the OFDI. Second, the overseas subsidiaries established for less than three years were excluded to avoid the unstable overseas operating performance due to the short establishment period of overseas subsidiaries (Sjoerd and Tatiana, 2017). Third, the sample of tax havens that used Hong Kong and Taiwan as transit ports, flowed to the Marshall Islands, Cayman Islands, and British Virgin Islands, as well as Singapore, Philippines, and Africa, was excluded. Fourthly, the information on overseas subsidiaries with missing crucial data for consideration of data continuity and availability is omitted. Finally, 554 overseas subsidiaries out of 279 Chinese listed companies were selected as the final sample and data were collected for these companies. The investigation covers the period from 2011 to 2019. The sample size includes 1,131 observations. The host countries of sample companies are scattered across 58 countries, with the top 10 being the United States, Germany, Australia, Vietnam, Japan, Italy, the United Kingdom, India, Thailand,

and the Democratic Republic of the Congo. These countries have signed BITs with China, which show the differences among BITs.

The firm-level data were collected from the overseas investment database of China's A-share listed companies, their annual reports, and WIND database. The country-level data were downloaded from the website of Ministry of Commerce in China, the United Nations Trade and Development (UNCTAD) Database, the World Development Indicators Database, and the World Governance Indicators Database. Additionally, to eliminate the effect of heteroscedasticity, the variables measured using absolute indicators were taken as natural logarithm. However, as the ROA and ROS have negative data, directly taking the natural logarithm will lead to missing data. Hence, we dealt with these negative data using the following formula:

$$\ln(x + \sqrt{x^2 + 1})$$

Table 2 reports the statistical description of each variable.

Table 2 Descriptive statistics

Variable	Variable mean	Observations	Mean	Std. Dev	Min	Max
ROA	Return on assets	1,131	31.400	1344.530	-1,881	45,063
ROS	Return on sales	1,131	199.600	17,764	-102,498	584,137
BIT	BIT quality	1,131	0.400	0.291	0	0.832
UNC	Uncertainty	1,057	0.272	0.186	0.017	1.180
ASSET	Firm size	1,131	18.055	2.412	4.327	29.540
HR	Firm human capital	1,131	0.229	0.184	0.005	1
SOE	Firm ownership structure	1,131	0.184	0.390	0	1
BETR	Bilateral economic and trade relations	1,131	0.160	0.112	0.017	0.939
CD	Cultural distance	1,131	2.692	1.565	0.556	7.678

GD	Geographical distance	1,131	7767.061	3719.659	809.538	16948.040
MA	Market attraction of the host country	1,131	2.805	2.030	-8.1	12.320
ES	Economic stability of the host country	1,131	2.563	2.913	-2.431	27.257

4. ESTIMATED RESULTS AND DISCUSSION

4.1 Benchmark testing

Before the benchmark regression, the relevant coefficient matrix was used to test for the presence of multi-collinearity between the explanatory variables. All relevant coefficients measured between the variables are less than 0.5, showing that the potential multi-collinearity effects are minor. Besides, using the variance inflation factor (VIF) can test for the presence of multi-collinearity in the variables further. The results show that the VIFs of all variables are less than 10, showing that there is no multi-collinearity between the variables. Hence, the following empirical tests can be conducted.

This study uses econometric model (8) and applies a fixed effects model to conduct an econometric test. The regression results in Column (1) of Table 3 show that the quality index of BITs passes the significance test and the coefficient is positive. It means that the higher the BIT quality, the more contribution the BITs can make to the overseas business performance of MNEs.

This study further examines the contribution of BIT's various dimensions to MNEs' overseas business performance. We estimate their differential impact on MNEs' overseas

business performance in terms of market access, investment protection, and investment facilitation. Column (2) of Table 3 shows that only the investment protection clause has a significantly positive impact on MNEs' overseas business performance. That is, the high-quality investment protection provisions play a dominant role in improving the MNEs' overseas business performance compared with market access and investment facilitation provisions for the following reasons. First, expropriation, damages, and dispute settlement of investment protection can address the gap in market access for investor protection in home countries. Therefore, there is a need to reduce the risk of unequal treatment of the home country when applying a host country's national treatment, most-favored-nation treatment, and fair and equitable treatment. Besides, the investment protection clause compensates for the low level of investment facilitation clause by strengthening the protection for overseas investors. These may be relatively insignificant for market access and investment facilitation provisions.

Table 3 Empirical results

Variables	Benchmark testing		Robustness testing		Endogeneity testing	
	(1)	(2)	(3)	(4)	(5)	(6)
BIT	1.146***		1.599***		1.373***	
	(0.439)		(0.459)		(0.438)	
Market access		-0.087		-0.164		-0.101
		(0.882)		(0.689)		(0.837)
Investment protection		1.537**		1.407**		1.512**
		(0.694)		(0.575)		(0.664)
Investment facilitation		-0.193		0.152		-0.183
		(0.312)		(0.269)		(0.300)
ASSET	-3.805***	-3.800***	0.308	-0.107	-4.332***	-3.712***
	(0.705)	(0.706)	(0.692)	(0.644)	(0.786)	(0.687)
HR	0.169	0.167	0.233**	0.301***	0.222**	0.184*
	(0.108)	(0.108)	(0.107)	(0.090)	(0.109)	(0.104)
SOE	-0.082	-0.092	-0.445**	-0.428***	0.052	-0.084

	(0.202)	(0.202)	(0.213)	(0.154)	(0.198)	(0.191)
BETR	1.120***	1.311***	1.072***	1.128***	1.364***	1.314***
	(0.231)	(0.285)	(0.238)	(0.236)	(0.229)	(0.273)
CD	-0.135	-0.233	-0.038	-0.127	-0.286	-0.232
	(0.200)	(0.236)	(0.206)	(0.172)	(0.240)	(0.195)
GD	0.726***	0.960***	0.689***	0.795***	0.840***	0.950***
	(0.244)	(0.290)	(0.251)	(0.240)	(0.292)	(0.277)
MA	-0.071	-0.034	0.092	0.042	-0.175	-0.044
	(0.103)	(0.106)	(0.091)	(0.113)	(0.134)	(0.106)
ES	0.214***	0.232***	0.181***	0.208***	0.286***	0.235***
	(0.067)	(0.069)	(0.061)	(0.072)	(0.090)	(0.069)
_Cons	9.169***	7.322***	-3.041	-1.912	10.211***	7.227***
	(2.563)	(2.761)	(2.608)	(2.294)	(2.800)	(2.642)
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Individual fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
N	211	211	212	212	143	211
R^2	0.317	0.329	0.232	0.255	0.423	0.333

Notes: *, **, *** means significant at 10%, 5%, and 1% levels respectively; Robust standard errors are calculated in bracket; the following table is the same.

4.2 Robustness and endogeneity tests

Robustness tests was conducted to ensure the reliability of empirical results. We replaced the ROA of the foreign subsidiary of MNEs in China in the benchmark regression test with ROS. The robustness test results, which are shown in Columns (3) and (4) of Table 3, indicate that BIT quality has a significant and positive effect on the overseas business performance of MNEs in China. High-quality BITs can improve the overseas business performance of MNEs. Besides, investment protection remains to have significant and positive effect on the overseas business performance of MNEs compared with market access and investment facilitation. Hence, the results of the robustness test are consistent with those of the benchmark test.

Additionally, there may be a reciprocal causal relationship between BIT and the overseas business performance of MNEs. To obtain more stable findings, we use an instrumental variable to address the potential endogeneity issues. Hence, the duration of diplomatic relations between the home country and the host country is introduced as an instrumental variable of BIT. On the one hand, the MNEs' overseas business performance should not be significantly affected by historical diplomatic relations between the host country and China (Wang et al. 2020). On the other hand, countries that historically have had friendly diplomatic relations with China have largely influenced the signing of BITs between the countries. This will have a significant impact on the improvement of the BIT's internal provisions. Therefore, the variable meets the selection criteria and conditions of the instrumental variable. We use a two-stage least squares (2SLS) method to estimate the regression model (8). The endogeneity test results, which are shown in Columns (5) and (6) of Table 3, indicate that the BIT quality index is significantly positive. Only investment protection have significant and positive effect on the MNEs' overseas business performance. The endogeneity test results are consistent with the estimation results in the benchmark testing. Hence, the benchmark test does not have significant endogeneity problems and the results are credible.

4.3 Heterogeneity testing

Test of countries at different development levels

The economic and institutional development of the host country affects the BIT quality on MNEs' overseas business performance. For example, there are significant differences between

developed and developing countries in terms of economic and institutional characteristics. It is imperative to examine the differential impact of BIT quality on MNEs' overseas business performance in countries at various development levels. Hence, we divided the overall sample into developed countries and developing countries sample groups, according to the social development level index. Then, we used the econometric model (8) to conduct an empirical test. The regression results are shown in Table 4. Columns (1) and (3) show that the estimated coefficients of BIT quality are significantly positive. However, the values and significance levels of Column (3) are higher. Some country-specific differences exist in the contribution of BITs to MNEs' overseas business performance. High-quality BITs contribute more to the overseas business performance of developing countries than developed countries. Owing to the poor institutional environment in developing countries, high-quality BITs can compensate for the institutional weaknesses of the host country, and thus significantly improve MNEs' overseas business performance. In contrast, developed countries usually have better institutional systems and lower investment risks, so the contribution of high-quality BITs to the overseas business performance of MNEs is usually weaker than in developing countries.

This study further examines the differences in the effects of market access, investment protection, and investment facilitation on the overseas business performance between developed and developing countries. The results in Columns (2) and (4) of Table 4 show that investment facilitation improves the overseas business performance of MNEs in developed countries significantly. For the subsidiaries of MNEs from developing countries abroad, investment protection improves their overseas business performance significantly because

developed countries have mature institutional protection mechanisms that can provide better investment protection for inward FDI. Besides, investment facilitation provisions in developed countries, which can simplify multinational investment processes through procedural and institutional facilitation, can enhance the likelihood of successful inward investment by providing facilitation services and improve the business performance of MNEs.

Table 4 Test results of countries at different development levels

Variables	Developed countries		Developing countries	
	（1）	（2）	（3）	（4）
BIT	1.218**		1.641***	
	（0.581）		（0.565）	
Market access		0.418		-7.710
		（1.166）		（5.920）
Investment protection		0.152		6.994**
		（1.305）		（3.092）
Investment facilitation		1.475*		-1.514
		（0.819）		（1.153）
Control variables	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes
Individual fixed effects	Yes	Yes	Yes	Yes
N	148	133	129	129
R^2	0.390	0.189	0.479	0.369

Notes: To save space, the control variables indicate the main control variables included in this study.

Test of MNEs with different ownerships

This study further examines the impact of BIT quality on the overseas business performance of Chinese MNEs with different ownerships. We divided the sample into the state-owned and non-state-owned enterprises. The regression results are shown in Table 5. The estimated coefficients of BIT quality are significantly positive in Columns (1) and (3), and the former has a greater coefficient. Thus, high-quality BITs can improve the overseas business performance of both state-owned and non-state-owned MNEs. Besides, BIT has a stronger effect in the overseas business performance of state-owned MNEs than non-state-owned MNEs because the state-owned MNEs have more government in the internationalization process than the non-state-owned MNEs. Consequently, the content of the BIT provisions are better suited to the needs of state-owned enterprises to make cross-border investments and more favorable to the overseas business performance of state-owned MNEs.

Furthermore, we analysed the differences in the effects of market access, investment protection, and investment facilitation on overseas business performance of MNEs with different ownerships. The results of Columns (2) and (4) show that investment protection significantly improves the overseas business performance of non-state-owned MNEs, while investment facilitation provisions enhance the overseas business performance of state-owned MNEs. Besides, investment protection provisions have significantly negative effect on the overseas business performance of state-owned MNEs because the state-owned MNEs usually have more home government support. In contrast, the non-state-owned MNEs are more vulnerable to the uncertainty in the business environment of host country because of less home

government support. The investment protection provisions can help the non-state-owned MNEs mitigate the uncertain business environment in the host country, thereby improving their overseas business performance.

Table 5 Test results of state-owned MNEs and non-state-owned MNEs

Variables	state-owned MNEs		non-state-owned MNEs	
	(1)	(2)	(3)	(4)
BIT	2.557***		1.127**	
	(0.982)		(0.551)	
Market access		3.525		-0.313
		(5.465)		(0.931)
Investment protection		-6.482*		1.768**
		(3.671)		(0.790)
Investment facilitation		3.395**		-0.213
		(1.529)		(0.339)
Control variables	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes
Individual fixed effects	Yes	Yes	Yes	Yes
N	54	40	157	157
R^2	0.539	0.582	0.272	0.291

4.4 Influence mechanism testing

This study further examines the influence mechanism of BIT quality on the overseas business performance of MNEs. It refers to the test for mediating effects proposed by Baron and Kenny (1986) and uses stepwise regression to empirically test the mediating variables in the theoretical model. Based on the aforementioned effect of BIT quality on the overseas business performance of MNEs, we conducted the following two-step regression. First, the significance of BIT quality on the uncertainty of business environment in the host country (model 9) is examined. Second,

the impact of uncertainty on the overseas business performance after controlling BIT quality level (model 10) is tested.

$$UNC_{jt} = \beta_0 + \beta_1 BIT_{jt} + \sum_{m=2}^{4} \beta_m \, CTRF_{it} + \sum_{n=5}^{9} \beta_n \, CTRC_{jt} + \partial_{ij} + \mu_t + \varepsilon_{ijt} \tag{9}$$

$$Y_{ijt} = \beta_0 + \beta_1 BIT_{jt} + \beta_2 UNC_{jt} + \sum_{m=3}^{5} \beta_m \, CTRF_{it} + \sum_{n=6}^{10} \beta_n \, CTRC_{jt} + \partial_{ij} + \mu_t + \varepsilon_{ijt} \tag{10}$$

Table 6 shows whether the impact of BIT quality level on MNEs' overseas business performance uses uncertainty as an influence mechanism. The results of Model 8 show that the regression coefficient of BIT quality on the overseas business performance of MNEs is 1.146, which is significantly positive at the 1% level. The results of Model 9 show that BIT quality has a significantly negative impact on the uncertainty of MNEs in the host countries. This result is consistent with the theoretical view. Model 8 shows that the uncertainty is negatively related to overseas business performance at 1% significant level. Besides, BIT quality index is significantly positive at the 5% level and less than 1.146. Therefore, there is a partial mediating effect of uncertainty between BIT quality and MNEs' overseas business performance. The empirical results verify the mediating role of uncertainty in the theoretical model.

Table 6 Test results of the mediating role of uncertainty

Variables	ROA	UNC	ROA
	（1）	（2）	（3）
BIT	1.146***	-0.202*	0.902**
	(0.439)	(0.106)	(0.589)
UNC			-0.459***
			(0.152)
Control variables	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes
Individual fixed effects	Yes	Yes	Yes
N	211	884	147
R-squared	0.317	0.268	0.285

5. CONCLUSION AND POLICY IMPLICATIONS

With regard to the influencing factors of the differences in BIT quality, most of the existing studies have remained at the macro level. The paper has contributed to the emerging market MNEs literature by investigating the effect of BIT quality on the overseas business performance of 554 overseas subsidiaries of Chinese MNEs from 2011 to 2019.

The three main findings of this study are as follows. First, high-quality BITs can significantly improve Chinese MNEs' overseas business performance. Besides, the investment protection provisions of high-quality BITs play a leading role in improving the overseas business performance relative to market access and investment facilitation provisions. Second, the promotion effects of BITs and the dominant effects of market access, investment protection, and investment facilitation vary significantly across countries at

different levels of development and across firms with different ownership. Third, high-quality BITs promote MNEs' overseas business performance by reducing the uncertainty of investment environment in the host country.

Based on the above research findings, we propose the following policy suggestions. First, high-quality BITs are an important tool to improve the MNEs' overseas business performance. For instance, MNEs should fully make use of the good and stable institutional environment provided by the high-level BITs in the internationalization process. This contributes to reducing the uncertainty faced by MNCs in host countries and enhances the investment protection of overseas investors' interests. Second, national governments should keep an eye on the new situation of international investment development and improve the investment protection, investment facilitation and market access provisions when signing new BITs. Third, national governments should focus on signing BITs with developing countries so that MNCs can overcome poor institutional environments, increase the legitimacy of MNEs in the host country and enhance investors' confidence. Finally, the national government should provide more policy assistance to the non-state-owned MNEs to help them mitigate the uncertainty of business environment in the host country.

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The Effects of Accompanying Local Spouses on Expatriates' Turnover an HRM Dilemma

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The effects of accompanying local spouses on expatriates' turnover: An HRM dilemma

Extended Abstract

Purpose

This unique study aims at answering a dilemma faced by the human resource management at multinational corporations around the world: if we assume that expatriates with accompanying local spouses are better adjusted in the host country, would that increase their interaction adjustment and lower their turnover intentions or increase their sense of security, hence, increase their mobility and turnover intentions.

Methods

To answer this dilemma, the study tests the effects of accompanying local spouses on the expatriates' turnover intentions with the mediation of interaction adjustment moderated by the accompanying children and work adjustment. To statistically test the model, both the hierarchical multiple regression and moderated mediation process will be used.

Findings

The initial correlations show that there is a positive association between the accompanying local spouse and the expatriate interaction adjustment while there is a negative association between the accompanying local spouse and the expatriate turnover intentions. Surprisingly, the accompanying children also have positive association with the expatriate interaction adjustment and a negative association the expatriate turnover intentions. As expected there is a very strong positive association between interaction adjustment and work adjustment while there is a strong negative association between these two variables and turnover intentions.

Implications

Not only does this study fill in a staggering gap in the academic literature on the family factors affecting the expatriation process, but it also provides a very clear answer to a dilemma faced by human resource management practitioners in multinational corporations around the world.

Originality

This is the first study that introduces the variable of a local accompanying spouse and examines its direct and indirect effects on the expatriation process with an outcome beyond the traditional cross-cultural adjustment dimensions, which is the turnover intentions, through a detailed moderated mediation model.

Keywords

Accompanying local spouse; Accompanying Children; Expatriates; Turnover Intentions; Interaction Adjustment; Work Adjustment

Introduction

Despite the growing literature on the expatriate spouse in general, studies on the effects of an accompanying spouse on the expatriation process in specific remain scarce, let alone the effects of an accompanying spouse from the host country. Indeed, a local spouse can help the expatriate overpass the language, culture, and social challenges, which creates a special advantage for the expatriate. However, this advantage could be a two-edged sword. If we assume that expatriates with accompanying local spouses are better adjusted in the host country, would that increase their interaction adjustment and lower their turnover intentions or increase their interaction adjustment and sense of security, hence, increasing their mobility and turnover intentions?

Since their seminal work on the positive effects of the accompanying spouse on American expatriates (Black and Stephens 1989), a growing number of scholars have started showing more interest in studying factors related to expatriates' accompanying spouses. However, most of those studies have focused on the spouses themselves, such as their cross-cultural adjustment (Bauer and Taylor 2001; Takeuchi et al. 2007; Kennard, E. 2012; Collins and Bertone 2017), their satisfaction and life balance (Passakonjaras 2019; Matsumoto and Gopal 2020; Supangco 2020; Shah 2022), their social support (Ramo set al. 2017), and their preparation and training

(Ramo set al. 2017; Webber and Vögel 2019). Rarely, have scholars attempted to investigate the effects of accompanying spouses on the expatriation process itself (Lauring and Selmer 2010; Gupta et al. 2012; Davies et al. 2015; Chen and Shaffer 2018) despite the general fact that the accompanying family especially, the partners have significant effects on the expatriate adjustment (Bhaskar-Shrinivas et al., 2005; Takeuchi 2010; Davies et al. 2015).

One of the interesting findings by Davies et al. (2015) was that "differences in expatriate academics' cross-cultural adjustment are not per se based on the different nationality of their partners, but are mainly due to an interaction effect of partner nationality and length of stay in the host country." In particular, the authors conclude that the expatriate family -including accompanying spouses and children- is even a major cause of maladjustment. Our study challenges the findings of Davies et al. (2015). It proves that the accompanying local spouse and children are positively affecting the expatriate interaction and work adjustments, hence lowering turnover intentions, which consequently contribute to a better expatriation experience. The relatively large and diverse sample of this study increases the generalizability of its findings while the reliability of its measurements and its detailed moderated mediation analysis enhance the validity of its findings.

The choice of turnover intentions as a dependent variable is very significant because it goes beyond the traditionally tested cross-cultural adjustment dimensions. In addition, expatitates turnover has dramatic tangible effects on the organization. The costs of losing an expatriate are directly related to the costs of selection, training, and relocation (Zheng and Lamond, 2010; Lueke and Svyantek, 2000; Birdseye and Hill 1995; Mendenhall and Oddou, 1985) and indirectly related to the potential failure of management, loss of effectiveness, and even the loss of MNC competitiveness (Zheng and Lamond 2010; Takeuchi et al. 2005; Mendenhall and Oddou, 1985). There are also negative psychological effects on human resource managers in the form of low self-esteem and lack of motivation to support new expatriates (Takeuchi et al. 2005).

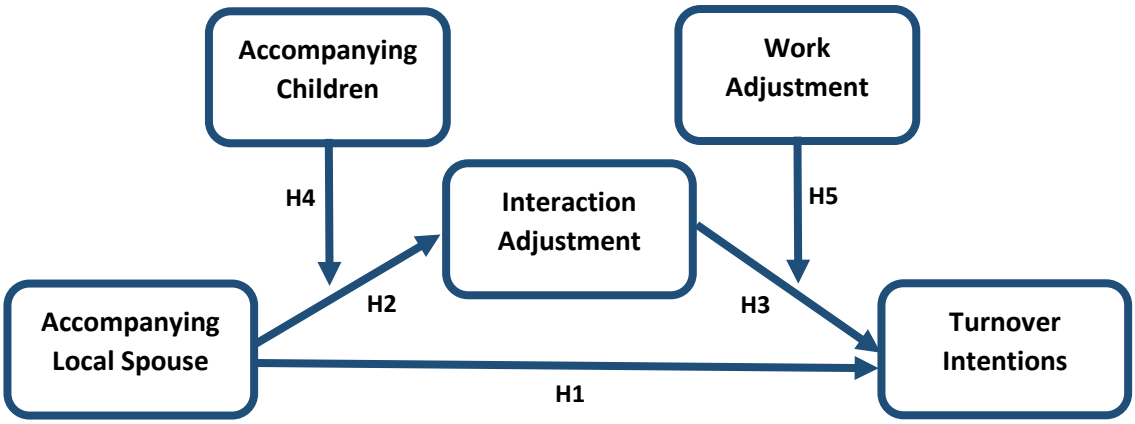
Research Sample

The original sample size is relatively large (n = 529), out of which 159 partially incomplete surveys were taken out, leaving a final sample size of (n = 370) which is very balanced in gender

52% males and 48% females and very diverse in terms of nationality from of western and non-western countries: USA = 21%, UK = 7%, Italy = 5%, Germany = 5%, France = 5%, Romania = 4%, Russia = 3%, Spain = 3%, Canada = 3%, Pakistan = 3%, Australia = 2%, India = 2%, Uzbekistan = 2%, Mexico = 1%, Belgium = 1% and the remaining 34% were from other countries.

Research Model

The research model will test the effects of an accompanying local spouse on the expatriates' turnover intentions with the mediation of work adjustment, moderated by accompanying children and work adjustment.



All Variables Correlations

Variables	1	2	3	4	5	6	7	8	9	10	11
Gender	1										
Age	-.023	1									
Level of Education	-.185**	.063	1								
Accompanying Spouse	.056	.078	-.043	1							
Accompanying Children	-.158**	.273**	.064	.347**	1						
Length of Stay in China	-.067	.301**	.059	.292**	.280**	1					
Chinese Language Proficiency	-.104*	-.193**	.069	.142**	-.020	.373**	1				
International Experience	.034	.434**	.089	.147**	.172**	.409**	.023	1			
Interaction Adjustment	.002	.028	-.080	.137**	.126*	.080	.200**	.047	1		
Work Adjustment	.110*	.126*	-.063	.053	.086	.008	-.039	.123*	.297**	1	
Turnover Intentions	-.001	-.123*	.191**	-.116*	-.130*	.028	.067	.005	-.217**	-.434**	1

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

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Internationalisation of Banks in a Dynamic Business Environment with Persistent Political Crises: A Community of Practice Perspective

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INTERNATIONALISATING BANKS IN DISRUPTIVE AND POLITICALLY SENSITIVE ENVIRONMENTS: A COMMUNITY OF PRACTICE PERSPECTIVE

Abstract

Most international business literature focuses on the internationalisation of manufacturing firms in relatively stable environments, conversely, there are limited studies on how service firms pursue internationalisation in disruptive environments. To extend understanding of service multinational enterprise (SMNE) internationalisation, we apply a communities of practice (CoPs) perspective. The study concentrates on bank internationalisation in Myanmar, a country characterised by a disruptive business environment, arising from unexpected political events and rapid institutional change. Our analysis of secondary sources uncovers close ties between Myanmar's political and economic actors, who have created multiple CoPs in the country. We argue that SMNEs need to align with carefully selected CoPs when pursuing internationalisation. Such alignment enables them to negotiate successfully with CoP members and reduce their 'practice distance' from them. In this way, SMNEs can obtain legitimacy and/or accelerate their entry into new markets. On the other hand, if they fail to consider the temporal nature of CoP memberships, such firms might increase their operational and reputational risks. This study contributes to the literature on market internationalisation by demonstrating how service internationalisation can be supported through prudent engagement with existing CoPs.

Key words: service multinational enterprises; communities of practice; disruptive business environments

Introduction

Globalisation has led international business (IB) scholars to explore how multinational enterprises (MNEs) create and capture value by overcoming business challenges arising from turbulent and politically sensitive contextual environments (Yahiaoui, Chebbi, Beddi & Thrassou, 2021; Shet & Bajpai, 2021). Most IB studies focus on understanding internationalisation of manufacturing firms. Scholars have previously questioned the applicability of existing internationalisation theories based on manufacturing firms to explain the internationalisation of service multinational enterprises (SMNEs). This is due to the heterogeneity in products and solutions offered by SMNEs (Buckley, Pass & Prescott, 1992; Chidlow, Ghauri & Hadjikhani, 2019). They suggested that SMNE management of social and political environments is the key for marketing strategy, competition, market image, success in entry and expansion in foreign markets (Marquina & Morales Carlos, 2012). Nevertheless, according to Chidlow et al. (2019), only 0.4% of the total published papers in the management field in the last four decades involve SMNEs.

The internationalisation of banks, as an example of SMNEs, has been somewhat dilatory owing to the nature of resource requirements and multiple and conflicting demands from citizens, politicians and regulatory institutions (Jack, Huang, Sun & Guo, 2019). As evidenced by the pandemic, financial crises and sanctions on banks in times of war, banks are constantly subject to regulatory reforms in response to major socio-economic events, protectionism, and political changes in home and abroad (Howcroft, Ul-Haq & Hammerton, 2010; Su, Fan & Rao-Nicholson, 2019). Such pressures have required banks to work continuously in overcoming these unexpected and unprecedented challenges, leading to our contention that banks pursue internationalisation in a singularly dynamic business environment. As an extreme instance of this type of business environment, we have chosen Myanmar, characterised by politically sensitive and disruptive events. Myanmar is a country which has received attention from international communities in recent years due to economic and political reforms, recurrent humanitarian crises and military coups. In 2010, after decades of military rule and economic sanctions imposed by the West on Myanmar businesses especially its banks, the country started

transitioning to market economy along with political reforms (Christensen, Nguyen & Sexton, 2019). At that time, many investors referred to Myanmar as 'Asia's Last Frontier Market' (Yohei and Jibik, 2021), at the same time, however, after the military coup in 2021, other commentators warned that Myanmar was becoming a 'failed state' or indeed had already become one (Kurlantzick, 2021). Nonetheless, SMNEs are internationalising in contexts such as Russia, where there are political crises economic sanctions and the violation of human rights (Mahuta, 2022).Whilst Myanmar may present extreme conditions, we argue that such conditions can occur anywhere. Our reasoning prompts the following research purpose:

To advance understanding in the internationalisation of banks in disruptive and politically sensitive environments by adopting a community of practice perspective

By applying a communities of practice (CoP) perspective, we contend that we generate greater insight into SMNE internationalisation, in particular viewing SMNEs from the perspective of the network. We share the view of Chandra and Wilkinson (2017), who found that network structure shapes the flow of information, the nature of international market opportunities to be discovered and exploited. Likewise, whilst individual firm internationalisation behaviour and performance over time is hard to predict, aggregate patterns are less so. Furthermore, this longitudinal study enabled us to capture dynamic events and their immediate impacts on SMNE internationalisation. We find that rapid institutional changes and historically close ties between Myanmar's political and economic actors, reinforced by the Western economic sanctions, provided both challenges and opportunities for the internationalisation of the SMEs in the study.

Our paper is structured as follows: we problematise existing literature on internationalisation of SMNEs, concentrating on banks, which we follow with a discussion on how CoP lens can complement institution-based view of understanding SMNE institutionalisation in disruptive and politically sensitive environments. Then, we provide our rationale for the method of conducting longitudinal secondary research. We conclude by discussing the different patterns of internationalisation emerging from the analysis undertaken by banks from CoP perspective.

Internationalisation of SMNEs

IB scholars argue that there are fundamental differences between goods and services that make it difficult for them to generalise foreign direct investment (FDI) theories across industries and sectors (Erramilli & Rao, 1990, Chidlow et al., 2019). Service firms rely on intangible firm-specific resources tailored to the needs of individual customers. Thus there are inseparability of production and consumption in service firms compared to manufacturing firms (Lee et al., 2014). Another notable difference between the internationalisation of service and manufacturing firms is that the former seldom require large-scale investment in physical assets, such as capital equipment and facilities, to establish a presence in foreign markets (Erramilli & Rao, 1990). Nonetheless, SMNEs' internationalisation has not been explored extensively as compared to their manufacturing counterparts. Within the business and management literature, the terms 'disruptive' and 'turbulent' have been used almost interchangeably to describe business environments characterised by uncertainty and inability to predict the future (Suikki, Tromstedt & Haapasalo, 2006; Rapaccini,Saccani, Kowalkowski, Paiola & Adrodegari, 2020; Bövers & Hoon, 2021). Disruptive appears to refer to environments in which businesses are required to adapt their processes to changes arising from digital transformations and technological innovations (Rapaccini et al., 2020, Chemma, 2021). Similarly, scholars use turbulent to refer to the dynamism in business environments caused by unprecedented events such as financial crises (Engwall & Hadjikhani, 2014), pandemic (Al-Omoush et al., 2022) and political incidents (Vecchiato, 2019). We take the perspective that technological innovations, digital transformations and unprecedented events create dynamism; consequently, affect business approaches implemented.

Internationalisation of Banks

Therefore, we explored scholarly literature on SMNEs and internationalisation of banks in both disruptive and turbulent business environments. Although IB studies on SMNEs are rare, studies on the internationalisation of banks in dynamic business environments are even more so (Boojihawon & Acholonu, 2013, Engwall & Hadjikhani, 2014). Engwall and Hadjikhani (2014) recognised this literature gap and developed a special issue on internationalisation of financial services in turbulent

markets in a leading international business journal. However, the majority of the papers in this issue focused on the dynamism caused by financial and economic crises in developed countries such as South Korea and US (Lee, Song & Kwak, 2014; Oh & Johnston, 2014). These crises were caused by market failures rather than political events. For example, the 2008 financial crisis was primarily caused by predacious lending directing at low-income home buyers and excessive risk-taking by global financial institutions (Markman and Venzin, 2014). As evidenced by the global pandemic and Russia's invasion of Ukraine, banks are operating now in business environments with unprecedented levels of dynamism arising from political events, followed by financial and economic crises.

Nonetheless, there is limited IB literature which contextualises these dynamisms in their theorisation of SMNE internationalisation. We attribute this limitation to the dominance of a strategic decision approach in which internationalisation decisions are autonomously made and controlled by SMNEs themselves (Shaver, 2013). Hence, prior studies tend to explore the antecedents to the decision-making process for internationalisation, the choices of location, and entry modes. They limit our opportunities to understand the roles played by the contextual environments and practices of host countries in the internationalisation processes of banks (Deng, Delios & Peng, 2020). Like quantitative scholarship, qualitative studies underpinned by the Uppsala internationalisation process model tend to focus on firm-specific characteristics and their internationalisation patterns (Chandra and Wilkinson, 2017). This model proposes that a firm's international business expansion is based on a series of incremental decisions, the successive steps of which are based on learning and knowledge acquisition about the foreign market and operation norms under stable market conditions (Welch & Paavilainen-Mäntymäki, 2014, Parada, Alemany & Planellas, 2009: Lee et al., 2014).

These studies have two distinctive limitations. First, by focusing on lead firms, scholars underplay the role that the institutional environments of host countries (e.g., regulations and customer preferences) play in internationalisation. Banks are, for example, are knowledge-intensive businesses with heterogeneous services (Grant & Venzin, 2009), so factors that could significantly impact the ability of host countries to exploit the market or existing resources may differ depending on the types

of services banks choose to provide. Second, to avoid said institutional constraints, banks may establish correspondent companies, or subsidiaries in similar sectors under different names or with informal statuses. However, by focusing on firm specific internationalisation and by underplaying the role of the host country's institutional environments, our understanding of different internationalisation patterns developed by banks to respond in highly dynamic and politically sensitive institutional environments is somewhat opaque. Some scholars argue that the transformative capacities of IB studies have not been realised because IB scholars have largely pursued theoretical and methodological approaches prevalent in examining the internationalisation of manufacturing firms (Doh, 2015). However, we argue, that SMNEs are more subject to social and political environments than manufacturing firms.

Communities of practice-based theoretical framework

As a means of addressing these characteristics, we turn to Communities of Practice (CoP) as an analytical lens to illuminate the process of banks' internationalisation in disruptive environments. CoP gives primary importance to understanding contextual factors, including those originating in both the home and host country, such as practices, communities, relationships, and networks that have been created due to pre-existing institutional limitations. Recently, Bicchi (2022) has promoted CoP as a unique way to understand how a small group of committed people can make a difference to wider international politics, through its ability to complement both institutional and network analyses. CoPs represent the practical side of formal structures or institutions and as such can capture realistic stories (Bicchi, 2022). According to CoP literature, a country may consist of multiple communities in which learning is an outcome of the lived social experience of community members (Vaughan & Dornan, 2014). A CoP may also represent a group of MNEs or even countries which internationalise together, enabling them to share knowledge, practices, and concerns in their internationalisation journey. We should not conflate CoPs with social network analyses or other network-based theories currently prevalent in management and IB literature. As Bicchi (2022) argues, social networks and cliques may be CoPs, for instance, CoPs involve the functional interpersonal, inter-group, and inter-organisational transmission of information. However, CoPs also include processes of social communication and

identity formation, through which practitioners negotiate and fix meanings, produce practices, and exercise political control (Adler, 2009).

The concept of boundaries between CoPs is very important. Akkerman and Bakker (2011) define 'boundary' as a sociocultural difference leading to discontinuity in action or interaction. The source of differences can be in the form of purpose, histories, tools, objects, use of language, problem-solving or interpretation. It can also vary in terms of competences and capabilities embedded within different CoPs (Wenger and Snyder, 2000). CoP is different from the dominant institution-based view in IB studies, which posits structural and deterministic interpretations of contexts, rules and regulations based on geographical boundaries (Deng et al., 2020). It emphasises that our analytical approaches should look above and below those institutions because CoPs do not necessarily coincide with institutions. It means, moreover, that CoPs can exist within and across institutional boundaries (Bicchi, 2022). CoP research suggests that when MNEs enter a new market, they will be crossing not only geographical but relational boundaries, that is they cross multiple CoPs and accommodating practices which are historically created from institutional voids, or culturally grounded activities, or both (Deng et al., 2020, Xu and Meyer, 2013). While institutions can contribute to a CoP's origins and/or evolution, institutions cannot deliberately create CoPs if practices are not aligned with existing members (Bicchi, 2022). Thus, Vaughan and Dornan (2014) argue that distance between practices is important because it is the productive tension between an individual's experience of participation and the community's definition of competence that drive learning. Likewise, MNEs which can reduce 'practice distance' by accommodating the existing local practices would face less resistance from the community members in their entry to CoPs.

CoP thinking provides constructs that allows us to investigate and understand how MNEs position themselves in relation to CoPs when they enter a new market (Welch and Paavilainen-Mäntymäki, 2014). A SMNE attempting to join a CoP may reduce practice distance by starting from its periphery and slowly foster acceptance, such as engaging with people from the community, sharing practice, and participating in conversations and problem-solving activities. In this way, a SMNE may gradually

become a full member of a community, a process Lave and Wenger (1991) describe as legitimate 'peripheral participation', where peripheral participants are intrinsically motivated to participate, and that full members of the CoPs are willing to accept these newcomers or MNEs (Abma, 2007). CoPs can influence institutions to integrate the practice of CoPs in a wider institutional setting via a reform process, depending on who the full members of these CoPs are, for example, members of regulatory bodies (Bicchi, 2022). Likewise, institutions can provide CoPs with opportunities. Once relevant CoPs are identified, MNEs may use brokers, boundary objects and boundary interactions to gain acceptance by members of a CoP. Brokers need to be sufficiently legitimate to influence the development of practice in CoPs, and MNEs must be capable of using boundary objects and boundary interactions to connect to various CoPs (Wenger, 1999).

In this paper, we will only focus on CoPs originated in host country rather than in home country and how MNEs may cross those CoPs (see Table 1). We provide a summary of the definitions of concepts related to CoP in Table 1. In the next section, we will discuss the methodology that we adopted for applying the CoP lens.

Table 1: Authors' Conceptualisation of CoP from SMNEs' Internationalisation Perspective

Concepts	Definitions	COPs in a host country	COPs from home countries
CoP	A CoP involves the functional interpersonal, inter-group, and inter-organisational transmission of information. It also includes processes of social communication and identity formation, through which practitioners negotiate and fix meanings, produce practices, and exercise political control.	An industry in a host country may have several CoPs which emerged from context specific events. Each CoP will have distinctive practice, developed from social interactions between members of the CoPs over time. In order to identify CoPs in a host country, scholars need to have high level of contextual intelligence.	MNEs may belong to CoPs in their host countries as they share histories, identities, purposes, challenges and practices. To identify CoPs, scholars can look for how MNEs from a country internationalise together. Sometimes, MNEs from different countries of origin may belong to a CoP, crossing geographical boundaries.
Boundary of CoP	It is a sociocultural difference leading to discontinuity in action or interaction.	In a host country, CoPs are separated based on differences in their practices arising from differences in purposes, histories, tools, objects, use of language, problem-solving or interpretation, competences and capabilities. CoPs can overlap as they start sharing those differences that separated them.	Similar to CoPs in a host country, MNEs may belong to CoPs in their home countries. MNEs from a CoP may internationalise together as they share same purposes for internationalisation or to overcome same challenges.
Practice Distance	The difference between the practice prevalent in a CoP and new practice.	The difference between the practice prevalent in CoPs of a host country and the practice brought by an MNE.	The difference between the practice prevalent in CoPs of a host country and the practice brought by an MNE or CoPs external to the host country. It can also be differences in practices between CoPs in the host country or across countries.
Legitimate Peripheral Participation	A process of participation by MNEs or CoPs to reduce practice distance.	An MNE may attempt to join a CoP by starting from the periphery of the CoP to gain acceptance by CoP members	An MNE from a CoP or CoPs collectively may start from the periphery of the CoPs in a host country to gain acceptance by their members.
Brokers	Brokers need to be legitimate enough to influence the development of practice in CoPs.	Individuals or Organisations that can broker between CoPs in a host country and MNEs.	Individuals or Organisations that can broker between CoPs in a host country and an MNEs from a CoP or CoPs external to the host country.

Boundary Objects	Boundary objects can be used to be accepted by CoPs. They must be flexible enough to adapt to local needs and the limitations of the several parties employing them, while robust enough to maintain a common identify across sites. Visionary boundary objects visions with a high degree of legitimacy in that they resonate emotionally with people within communities of practice and are therefore difficult to oppose.	Boundary objects used by MNEs to be accepted by CoPs in a host country.	Boundary objects used by an MNE from a CoP or CoPs collectively from home countries to be accepted by CoPs in a host country.
Boundary Interactions	Settings in which CoP members and MNEs interact. They can take various forms such as meetings, visits, and delegations	Settings in which members of CoPs in a host country and MNEs interact. They can be virtual and physical settings in host or home countries.	Settings in which members of CoPs in a host country and MNEs from a CoP or CoPs interact. They can be virtual and physical settings in host or home countries.

Research design

In recent years, Myanmar has experienced economic and political reforms, recurrent humanitarian crises and military coups leading to significant institutional changes and thus presents a valuable but demanding research context.

Research context

Though Myanmar's financial sector liberalisation commenced in 1990, only an estimated 21 percent of Myanmar adults has a bank account (Alexandra Drees & Annamalai, 2016). This figure suggested that there were some forms of discontinuity and boundaries between local banks and a large segment of the public, which presented a great market opportunity, not only for local but also for international banks and financial institutions. Nonetheless, no foreign bank was officially providing financial services in Myanmar when we commenced our research in 2008. Until 2014, foreign banks were only allowed to open representative offices from which they conducted market research and established business links between home and host countries. We set out below an overview of Myanmar's political economy in six phases from its independence from the British Government in 1948 as a means of providing the context of the study:

Phase 1 (1948 to 1962) –Myanmar implemented a parliamentary democracy comprising a mixture of nationalism, socialism and capitalist market systems.

Phase 2 (1962 to 1988) – In 1962, Myanmar's first military coup occurred. During this period, an economic treatise, 'the Myanmar Way to Socialism' was written as the blueprint for economic development. The policy's objective was to reduce foreign influence and to expand the role of the military in Myanmar. Foreign banks were forced out of the country.

Phase 3 (1990 to 2010) – In 1990, an election took place after a series of pro-democracy protests in 1988. The National League for Democracy (NLD) won the, but the military nullified the election and refused to relinquish power. Subsequently, the military government introduced a market-oriented economic system in the first half of the 1990s.

Phase 4 (2010 to 2015) – In 2010, another reform took place along with the first democratic election in 22 years. The military-backed Union Solidarity and Development Party declared victory. The international community considered this a historic reform, both politically and

economically, because this change was very much an unexpected event, although there were also sceptics. As in the 1990s, market economy reforms were initiated.

Phase 5 (2015 to 2021) – In November 2015, another general election took place. This time the NLD, led by Daw Aung San Su Kyi, won by a landslide. The NLD then designed its own economic reform agenda for the market economy.

Phase 6 (2021 to Present) – In November 2020, a further election took place. As in 1988, the military declared that the election was not fair, and a coup took place on 1st February 2021. Subsequently, a caretaker government was formed which dropped the NLD's reform roadmap and introduced its own market reform.

The research covers the period from 2008 to 2021, spanning phases 3 to 6 and thus recognises the importance of explicitly incorporating time in theory building in developing SMNE internationalisation patterns. CoPs are not artificially created and their members and networks could extend beyond geographical boundaries (Christensen, 2016), creating challenges for operationalising CoP in scholarly research. Given the limited discussions in the literature of the internationalisation of banks viewed through a CoP lens, we reasoned that a qualitative study would best address the research question. The political situation in Myanmar places significant constraints on data collection, therefore we were largely reliant on secondary data.

Data collection and analysis

We assembled a variety of secondary sources (see Table 2). We explored archival records to achieve two objectives: 1) to understand the contextual environment of the host country, i.e., Myanmar's financial sector for identifying relevant CoPs, their historical origins, members and practice; and 2) to understand how banks navigate CoPs in the host country in their internationalisation journeys. To achieve the first objective, we identified academic articles, newspapers and reports related to Myanmar's financial sector (see Table 2). Additionally, we conducted informal interviews with staff working at Myanmar banks and the Central Bank of Myanmar (CBM) enabling some amplification for the material in the archives and for triangulating our analyses (Farquhar, Robson & Michels, 2020). Owing to the need for extreme caution in protecting the identity of informants, we do not

follow the usual practice of *in vivo* extracts. The informal interviews also provided further sources for archival resources, such as detail on how regulatory guidelines were implemented.

Table 2: Details of Archival Resources

Source	**Examples of Sources Consulted**	**Number Analysed**
Focal banks and Financial Institutions	Focal company website, corporate information, press releases, general information, published annual reports, video recordings of annual general meetings	7 4 Videos
Industry bodies and regulators	Regulatory guidelines, video recordings from industrial conferences. (e.g., International Financial Corporation, Central Bank of Myanmar Regulations for Foreign Banks, video footages of Microfinance Conference organised in Myanmar in 2019)	25
National newspapers	Articles on financial sector where the reporters interviewed the senior managements of national and international banks working in Myanmar and questioned them on their visions for their businesses (e.g., Korea Times, Wallstreet Journals and Myanmar Times)	87
Industry/Consumer surveys	Financial inclusion index (e.g., World Bank Global Findex indicators)	5
Academic articles	Published conference and journal articles on Myanmar's financial sector	9

Consistent with qualitative research practice, we assembled the data and conducted the coding and analysis concurrently. We went back and forth between the coding, gathering further data and reflection (Bass & Milosevic, 2016), ensuring that we were open to emergent themes that might deepen our understanding of the phenomenon under investigation (Teagarden, von Glinow & Mellahi, 2018). During the course of our data analyses, we realised that the process of identifying relevant theoretical constructs for CoP presents significant challenges, especially in the financial sector, which provides heterogenous products and services. We chose to focus only on the stakeholders involved and the dynamic interactions between them in the most important function of retail banking, namely the allocation of credits or lending. We provide some examples of our thematic coding process in Table 3.

Table 3: Examples of thematic coding of archival data

Theme	**Archival Records / Informal Conversations**	**Supporting Archival Records and Informal Conversations**	**Interpretations via the CoP Lens**
Boundary of banking CoP for foreign banks and members of the CoP	*'Some local financial institutions are lobbying Myanmar leaders to delay a wider entry of foreign financial firms while expanding their own branch networks. Myanmar officials say they are eager to lure international banking expertise after shutting out foreign banks for nearly five decades, but not on a major scale yet'* (Mahtani & Barta, 2012)	We had informal conversations with senior managements of banks in Myanmar. Other industry reports and academic papers: Win & Kofinas (2021), Schellhase & Sun (2017) and Turnell (2011)	Local financial institutions formed part of Myanmar Banking CoP, whereas government-backed CBM was a broker that had the authority to allow foreign banks to enter the CoP. The lobbying reasons for local banks to restrict foreign banks was their limited banking expertise.
Boundary of banking CoP reinforced by economic sanctions	*'U.S. officials said the government would suspend sanctions that had long blocked American investment in Myanmar … permit U.S. companies to invest in various sectors of the economy, including energy, mining, and financial services.'* (Hiebert & Killian, 2013)	Other industry reports and academic papers: Turnell (2009)	The boundary of the banking CoP was reinforced by economic sanctions on Myanmar from the US due to its persistent human rights violations. This created barriers for foreign banks seeking to enter the banking CoP.

Findings

IB scholarship tends to discuss the internationalisation of SMNEs either customer-following or market-seeking (Erramilli and Rao, 1990, José Álavarez-Gil et al., 2003). Customer-following firms follow local customers—i.e., manufacturing companies that have already entered those markets. Market-seeking firms are those that search for new markets after having gained enough of a market share domestically. Thus, we can use these two distinctive objectives as a basis for identifying banks' internationalisation.

Emergence of Banking CoP and Foreign Banks' Entries to the CoP for Customer-following

Early that decade, Myanmar's government rapidly implemented market reforms by allowing new local state-affiliated companies and business groups to set up banks. The main purpose for the establishments of these banks was to fund their own companies and government funded projects. The government thus recreated a socialist-styled banking model (Win and Kofinas, 2021). The dynamic interactions between the members of the Banking CoP were even more complicated as there were high levels of interdependencies among them. For instance, the CBM would expect banks to buy government bonds to fund the government budget deficit, while imposing controls on them to limit risk-taking behaviour. Moreover, those who were providing strategic directions at local private banks were ex-bureaucrats previously employed by state-owned banks and the CBM. These individuals provided banking training to new recruits through Myanmar Banking Associations. We identified this as Banking CoP. Its members were the government, business groups and their affiliated companies, private banks and the CBM. They had a collective understanding that the private banks were created to provide funds to their respective businesses. Mutual engagements between the government, banks and businesses existed through reemployments of ex-bureaucrats at local private banks, and these bodies had shared repertoires by virtue of training programs. In the Banking CoP, the CBM could be identified as the broker, since it had the official authority to allow entries of foreign banks.

The boundary of the CoP was reinforced by economic sanctions from the Western governments on the import of financial services to Myanmar in 1988 following the military's brutal crackdown of protesters that year. The U.S government, for example, issued six federal laws and five presidential

executive orders against Myanmar between 1990 and 2008, restricting new investment, imports, visas, and multilateral assistance (Hiebert and Killian, 2013). This meant Myanmar banks could not internationalise outside of the country, and foreign banks could not enter the sector. Though members of the CoP had the privilege of preferential credit due to a lack of foreign banks, local banks had limited expertise to compete against them because they had extensive international experience. In 2010, after 22 years of economic and political isolation, Myanmar held its first democratic election. The party backed by the military won, and a military-led government was formed on the following year. Both Western and Asian governments perceived this as a historic reform.

In 2012, the U.S Treasury's Office authorised U.S entities to export financial services and to make new investments in Myanmar (Hiebert and Killian, 2013). Consequently, Myanmar attracted FDI from different countries, and from Asian countries in particular. However, CoP members have been lobbying the CBM not to permit the entry of foreign banks to the sector (Mahtani and Barta, 2012). They were aware that entrants of foreign banks would allow consumers to obtain better and more appropriate services for a lower price. Nonetheless, hostile sentiments towards foreign banks were not shared by all local banks. Some viewed the entry of foreign banks as learning opportunities because they considered them to have more international banking knowledge and expertise than local banks (Mullins, 2014). From 2014, foreign banks were allowed to enter Banking CoP with three types of licenses: representative office, subsidiary license and branch license.

As representative offices, banks could conduct market research for their associated businesses in home countries. As a branch, foreign banks could provide financing and other banking services to local companies, in cooperation with foreign companies and local or foreign financial institutions. Nevertheless, foreign bank branches were not allowed to offer retail banking services. Moreover, they could only establish one place of business. As a subsidiary, foreign banks were not required to cooperate with local financial institutions to provide financial services. Instead, they were permitted to provide retail banking services and products directly to local businesses and to establish up to ten places of business. In some instances, foreign banks' investment models required approvals from not

only CBM but also from the central banks in their home countries. Co-President of Kasikorn Bank said:

> KBank is considering negotiation of investment models to finalise an appropriate structure there. This will depend on approval by the CBM and the Bank of Thailand concerning the business licence type (Banchongduang and Polkuamdee, 2020).

Only from 2020 onwards (Phase 5), under the NLD-led government, could existing foreign bank branches/representative offices be converted into subsidiaries, and even then, this was only possible after three years of operations in the country. The CBM expected foreign banks who expressed interests to Banking CoP to provide training to local employees and work in cooperation with local banks (Somwaiya, 2018). However, foreign banks were not willing to establish joint ventures with local banks because they were aware of the purposes of local banks' establishments, i.e., to fund their own businesses as we discussed previously. Vice President of Bangkok Bank said:

> … it would help if the central bank allowed us to open a branch here. It doesn't need to give us a full banking licence, but can cherry-pick the areas in which the branch can operate. We don't want to establish a joint venture, given the associated risks from the partners (Deboonme, 2012)

Foreign banks were also aware of the hostility of local banks to their entry into the sector. Thus, by opening representative offices, foreign banks used different boundary objects to connect with different CoP members.

We found that boundary objects commonly used by foreign banks to achieve legitimacy with local banks and the CBM were 'shared experiences' and 'technical expertise'. This allowed foreign banks to reduce perceived practice distance between themselves and local banks. For instance, a Thai bank, Siam Commercial Bank (SCB) provided a 'Myanmar Banker Leadership Program' to local banking staff (including those from the regulatory department, and state-owned and private banks) who lacked knowledge and capacity to cope with the changing landscape of the banking sector. Emphasising the similarities between the underdevelopment of Myanmar's banking sector today and that of Thailand's 20 years ago (shared experiences), the Head of International Banking from SCB said (Mizzima, 2017):

> Since establishing our presence in Myanmar in 2012, SCB has been keen to contribute to the Myanmar's government effort to help improve the financial sector … we approached the Myanmar Banks Association to develop the SCB Bankers Academy, which they immediately welcomed.

SCB obtained subsidiary license in 2020. By the end of 2020 (Phase 5), there were already 20 Asian banks (either as branches or subsidiaries), with no Western bank participating in the sector (having only opened representative offices). These banks were from China, Singapore, Taiwan, Japan, Hong Kong, South Korea, Thailand, Vietnam, and Malaysia. These countries made constituted the top eight countries that contributed to Myanmar's FDI as of 2021. Thus, their primary purpose for entering the Banking CoP was for customer-following (Hellman, 1996). However, those banks that chose to open as subsidiaries also had ambitions to expand their market share in the country. For instance, SCB's co-president said (Banchongduang, 2020):

> SCB will focus on large corporate clients, both Thai and Burmese, operating in Myanmar. Many of the bank's corporate clients are already operating in Myanmar, and outbound investment is expected to rise in line with the country's growth potential

As most banks that had received branch and subsidiary licenses to operate in Myanmar were state-affiliated, their respective governments often acted as brokers, and state visits were used as sites for boundary interactions to establish connections between their banks and the Banking CoP (see Appendix 1). For instance, heads and representatives of South Korea's major banks, such as KB Kookmin, Shinhan, KEB Hana and Woori, and the state-run Industrial Bank of Korea (IBK) and Export-Import Bank of Korea, joined the state visit of President Moon Jae-in to Myanmar in 2019 (Park, 2019):

> Most of the Korean banks don't have offices or branches in Thailand and Laos, but the major banks have offices or branches in Myanmar and wait for the regulator's approval to offer an extended range of financial services. They expected the planned visit to deliver a boost for the regulatory process

During this state visit in Myanmar, Lee (2019) said:

> Korean lenders are seeking business expansion in Myanmar, a member state of ASEAN emerging as a key growth area under the Moon Jae-in administration's New Southern

> Policy … with Myanmar following the September MOU signed jointly by the bank, Korea Trade-Investment Promotion Agency (KOTRA) and Korea Land & Housing Corp. (LH) to help Korean SMEs enter the Southeast Asian country …

These foreign banks entering Myanmar were also facilitators of their home country governments' policies and acted as enablers for other non-banking firms to enter Myanmar. Thus, banks were more than just customer-following. They were facilitators or brokers for internationalisation of manufacturing firms. A Singaporean bank, United Overseas Bank (UoB), had been operating in Myanmar since 1993 and converted to a branch in 2015. It acted as a broker between bilateral and multilateral investments (Deboonme and Kyaw, 2017):

> UOB's Yangon branch has facilitated several deals in these sectors, such as the financing of a new power plant in Yangon with Singapore-based Royal GK and a loan—the first onshore loan by a foreign bank in the country—to Rangoon Excelsior Co, a French-Myanmar joint venture.

The above examples demonstrated that CoP members can play multiple roles in different CoPs across different sectors (Deng et al., 2020).

Emergence of Unbanked CoPs in Myanmar

Myanmar did not have credit rating agencies with which to assess the credit worthiness of local businesses until 2018. This made it even more difficult for local small and micro businesses to access loans from local banks. These businesses perceived those local banks only served corporations and those connected to government, and so voluntarily excluded themselves from using banking services. Therefore, to solve their daily financial needs, non-governmental organisations (NGOs) had been providing microcredit to these communities, and especially those in rural regions. Foreign retail banks would not normally be attracted to participate in these communities. However, our findings demonstrated that these communities allowed banks to form a distinctive business model to gain markets in Myanmar.

Microcredit is provided in the absence of conventional forms of collateral by microfinance institutions (MFIs). Group (mutual) guarantee mechanisms, such as peer monitoring and peer pressure, are employed as a form of social collateral (Anderson et al., 2009). They are typically formed by a small

group of individuals who live in the same area and meet regularly. The members usually had similar purpose for participating in the group. We found that in areas where the livelihood of members depended on agriculture, microcredit would be used for funding agriculture related costs and investments. Likewise, in areas where the textile industry prospered, textile weavers would form a group to obtain microcredit. Thus, there existed multiple Unbanked CoPs which were formed to resolve location-specific problems in dispersed geographical regions of Myanmar. Before 2011, majority of microcredit providers operated without legal status.

The Microfinance Law that was passed in 2011, was perceived by MFIs as a law that gave legitimacy or legal status for them to obtain findings from local and international banks, and not simply to conduct operations in Myanmar (Duflos et al., 2013). Under the law, MFIs were regulated by the Financial Regulatory Department of the Ministry of Planning, Finance and Industry (MPF). The law legitimised the existing providers and paved the way for new providers to enter the market. Some banks set-up subsidiaries to enter Unbanked CoP with the purposes of market-seeking objective, positioning as legitimate peripheral participants of the Banking CoP and both.

Foreign Banks Operating in Unbanked CoPs as Legitimate Peripheral Participants of Banking CoP

As discussed previously, obtaining banking licenses was difficult, and foreign banks faced various restrictions (i.e., limits on the number of branches that foreign banks could operate) resulting from lobbying of local banks. By participating in the unbanked sector as MFIs, these banks were able to overcome the limits on sites of businesses they could operate as banks. Thus, by entering Unbanked CoPs, these foreign banks were able to position themselves as legitimate peripheral participants of the Banking CoP. This also serves multiple purposes for them. First, by entering Unbanked CoPs, foreign banks were able to achieve their market-seeking objectives. Most of these foreign banks entered Myanmar because there was high competition in their home countries. For instance, a South Korean bank, Suhyup Bank, decided to establish its own subsidiary in 2019 (Kim, 2019). It chose Myanmar as the first country in which to start its overseas business because it was possible to start with a small amount of investment, and relatively easy to gain approval for new business from the local government,

unlike the Banking CoP (Yoon, 2019). This implies that the entries of foreign banks into the Unbanked CoPs were to avoid the regulatory barriers of entering the Banking CoP to seek new markets. Second, some foreign banks entered Unbanked CoP to improve corporate image and achieve their long-term goal of entering to the Banking CoP. Head of a South Korean Bank, Woori Bank's global business unit said (Park et al., 2016):

> … decided to offer small loan services first before entering into the bank industry because the operation of a bank branch in Myanmar is limited to only local people and businesses based on its own regulation … the step-by-step procedure of how the lender is planning its entry into Myanmar shows it is fully determined to offer financial services to local consumers and businesses

Likewise, another South Korean Hana Bank said that the microfinance subsidiary in Myanmar was to boost the bank's corporate image in Myanmar and potentially help the bank's long-term goal of entering the local banking industry (Korean Herald, 2014). Some banks took this approach of entering Unbanked CoPs further by developing distinctive internationalisation patterns.

Balancing Practices across Unbanked and Banking CoPs for Customer-following and Market-seeking

In this section, we will discuss how banks crossed multiple CoPs to diversify their markets and achieve both market-seeking and customer-following objectives. One of the internationalisation pattern under this category is simultaneous entries to banking and unbanked CoPs. For instance, in 2016 (Phase 5), South Korean Shinhan Bank and Shinhan Card, both of which are subsidiaries of Shinhan Financial Group, opened a foreign branch within the Banking CoP, and a subsidiary in the form of an MFI to serve Unbanked CoPs simultaneously in Myanmar (Chung, 2016). The bank's branch focused on corporate finance, while the subsidiary of Shinhan Card, Shinhan MFI was to sell microloans to employees of the client firms of Shihan Bank in Myanmar. A similar pattern was followed by South Korea's largest housing finance bank, KB Bank, which was awarded a subsidiary license in December 2020 to sell advanced financial products in Myanmar. However, it collaborated with the Construction and Housing Development Ministry of Myanmar and the Construction and Housing Development Bank that was a member of Banking CoP. This collaboration was formed to

provide real estate and infrastructure financial products to the low-income class with poor residential environments in Myanmar (Herh, 2017, Ko, 2019). We also found that banks would use their informal statuses as MFIs to collaborate with those foreign banks which had already entered Banking CoP. For instance, in 2021, a Hana Microfinance (a subsidiary of South Korean Hana Bank) collaborated with the branch of a Vietnamese bank, Joint Stock of Commercial Bank for Investment and Development of Vietnam (BIDV) in banking CoP on the basis of cross product use and knowledge sharing.

According to the collaboration, BIDV Yangon would provide a comprehensive range of banking products and services including loans, guarantees, deposits, payment services, and e-banking for Hana Microfinance's investment activities. Hana Microfinance will give priority to using the services BIDV Yangon provides (BIDV Review, 2021). The approach in which South Korean banks used MFIs as subsidiaries for collaborations with members of Banking CoPs was significantly different from the original purpose of MFIs, i.e., providing loans to those unbanked communities in rural areas. Thus, one of the regulators at a Microfinance Conference in 2019 mentioned that many of these MFIs started losing the characteristics of MFIs as they started behaving like banks. For instance, as MFIs, they were expected by the regulator to follow their customers in rural areas. Instead, some MFIs opened their offices in urban areas, and the large loan portfolios of MFIs were individual loans with personal guarantees rather than group-based loans.

Temporal Nature of CoP Memberships

In the previous sections, we have briefly highlighted how changes in governments (the temporal nature of CoP memberships) influenced policies for the internationalisation of banks to Myanmar. While we were examining banks' internationalisation in Myanmar, our data collection unexpectedly coincided with the military coup that occurred on the 1st of February 2021 (Phase 6). This created unprecedented disruptions to international businesses operating in the country. After the political reform in Phase 3, some sanctions on Myanmar's military were lifted. This enabled international businesses to form business partnerships in the form of joint-ventures with the military and its affiliates, which were then financed by foreign banks. However, the coup led the banks to receive unwanted attentions from international civic and human rights groups, thereby creating both

operational and reputation risks. For example, Shinhan Bank's branch in Myanmar was accused of indirectly providing loans to Myanmar's military in 2019 (Phase 5) through a Korean and Myanmar joint-venture steel making company, Posco C&C, which was established in 2013 (Choi, 2021). This was a joint venture between the military-controlled Myanmar Economic Holdings Limited, and the Korean Posco Group. Posco Group admitted that its Myanmar Posco C&C received loans from Shinhan Bank. Yet, Shinhan Bank declined to comment on the issue. It only confirmed that the loan was repaid in May 2020 (Phase 5) (Choi, 2021). FDIs from South Korea to Myanmar were initiated by the government's New Southern Policy, South Korea's Embassy organised a high-level meeting between civil servants of the military government and Korean companies in Myanmar. This event was faced with criticisms from civil society groups and institutional investors opposed to the coup (Davies and Reed, 2021). On the other hand, banks' microfinance subsidiaries in Myanmar were not targeted by rights groups.

The findings of this study demonstrate that banks need to navigate across different CoPs and to choose CoPs carefully so as to avoid putting their firms' and affiliates' market image at risk. The analysis shows be cautious in how they internationalise in dynamic and politically sensitive environments.

Discussions and conclusions

In this paper, we used the CoP lens to explain how banks internationalise in Myanmar's extremely politically sensitive and highly dynamic business environment. Based on qualitative data gathered over a period of n years, we contribute to research in the field We confirmed arguments made by previous IB scholars such as Chidlow et al. (2019) who suggested that management of social and political environments by service firms is the key for marketing strategy, competition, market image, successful entry, and expansion in foreign markets. To our knowledge, the CoP lens has not been used extensively in IB literature before. Like Bicchi (2022), the purpose of this paper was not to convince IB scholars to abandon well-established analytical frameworks such as institution-based views and social network analyses. Rather, we would like IB scholars to include CoPs in their analytical repertoires and recognise them when they see them. Our paper makes several theoretical,

methodological, and practical contributions. Firstly, by means of the CoP lens, we highlighted that the internationalisation of banks means crossing both geographic and relational boundaries. S?MNEs which are able to navigate different CoPs in a host country may be able to accelerate their entries to new markets and identify and exploit new opportunities. Once appropriate CoPs are identified, SMNEs should identify different boundary objects and legitimate brokers to gain acceptance by CoP. On the other hand, SMNEs which fail to consider how different practices emerge from pre-existing institutional limitations will face challenges in their internationalisation processes. Often, they can expose MNEs to not only political but also reputational risks. Secondly, unlike the existing literature on banks' internationalisation that focus on banks as single entities (Jack et al., 2019, Markman and Venzin, 2014), we emphasise that banks may set up subsidiaries in different CoPs to connect with the existing practice prevalent in CoPs and thereby become accepted by members. These forms of internationalisation may not be detectable through quantitative measures. Thirdly, we introduced temporality into our CoP theoretical constructs by refining our theoretical framework in relation to wider institutional changes, such as the legitimacy of members within the Banking CoP and membership temporality (George and Jones, 2000). Consequently, we underscore that those banks operating in dynamic and politically sensitive business environments will face different challenges and opportunities at different times. Fourthly, by viewing firms from a network perspective, rather than networks from firm specific internationalisation (Chandra and Wilkinson, 2017), our research has made practical contributions. This allowed us to demonstrate the predictability of our theoretical framework to some extent even in dynamic business environments. As Wiggins and Ruefli (2002) argue, there are very few firms which remain leaders in their industry over extended periods of time, regardless of their intrinsic qualities. Therefore, it is important for practitioners to know the different internationalisation patterns implemented by their competitors. Lastly, though it was unexpected, we also made contributions to the questions often raised by IB scholars on the applicability of Western paradigms to understand Asian MNEs' internationalisation behaviour (Deng et al., 2020, Meyer and Peng, 2016). Our study found that these banks which participated in Myanmar's dynamic business environment were all Asian banks. As of 2021, there were a total of Asian banks with no Western banks participating in the sector (see Appendix 1). We demonstrated how Asian MNEs used the social

networks and communities in host countries emerged from institutions voids to identify opportunities and tools to overcome challenges to enter Myanmar.

Our paper has limitations, primarily, we focused on the CoPs in host countries (see **Table 1**) and how banks used them to accelerate their entries and revise their business models. For instance, we briefly described a distinctive pattern of internalisation for South Korean banks in Myanmar. We can identify this as a CoP because they had common goals, i.e., to overcome the competition in their domestic markets. Thus, future studies may consider how MNEs from one country or different countries form a CoP to negotiate with a host country government when seeking entry. This approach may allow us to understand how trade blocs can facilitate the internationalisation of MNEs located in different countries.

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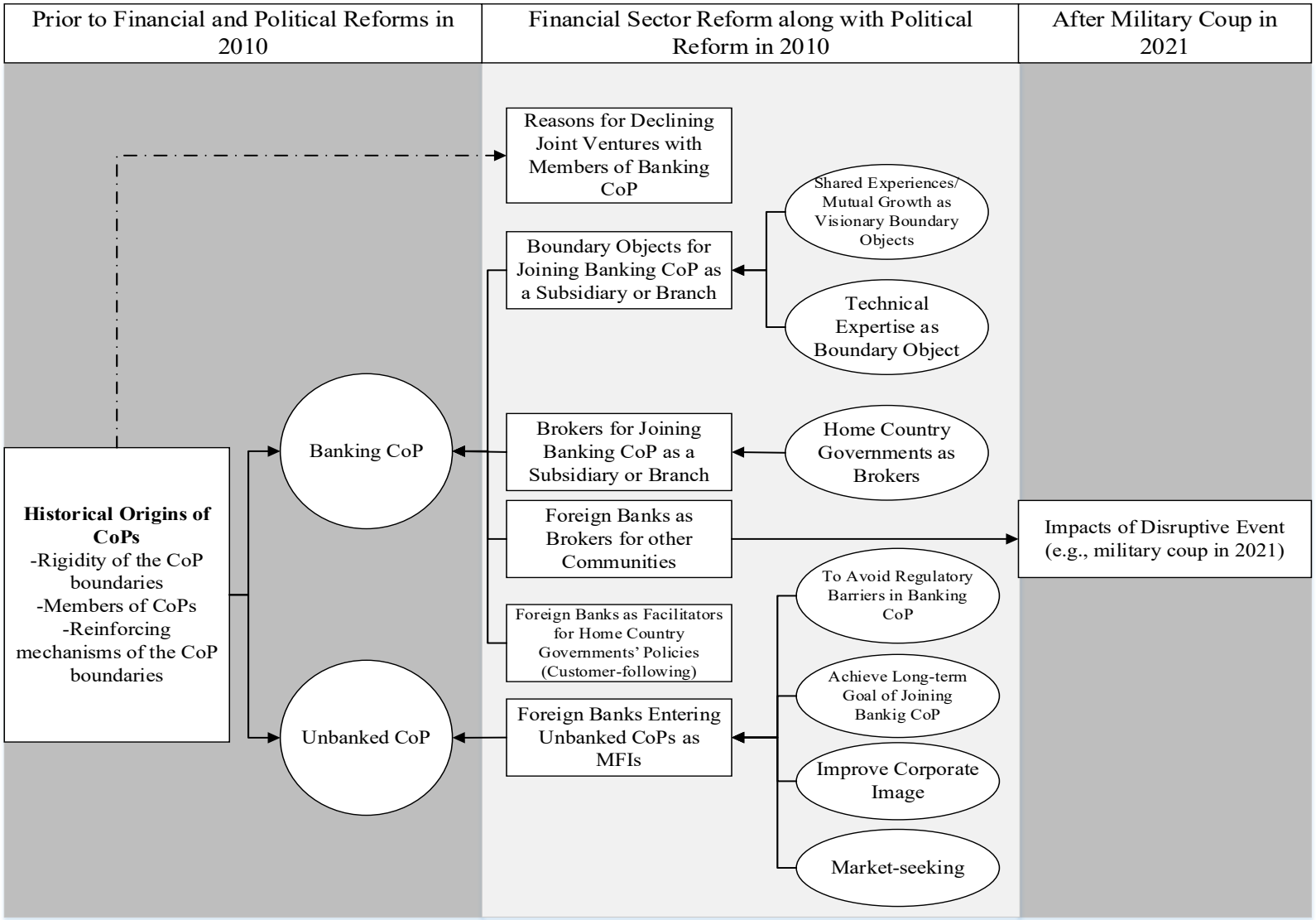
1. Appendices

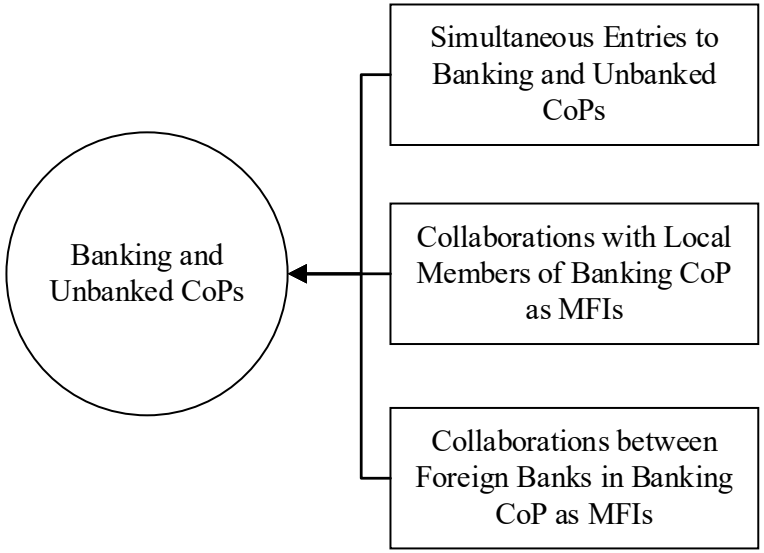
Appendix 1: Examples of Foreign Banks' Participations in Myanmar since 1990s

Foreign Banks	Explicit State-Affiliation	Country of Origin	Representative Office	Branch License	Subsidiary License
United Overseas Bank Limited	Yes	Singapore	1994	2015	No
Industrial and Commercial Bank of China	Yes	China	2011	2015	No
The Joint Stock Commercial Bank for Investment and Development of Vietnam (BIDV)	Yes	Vietnam	2013	2016	No
Shinhan Bank	N/A	South Korea	2013	2016	No
Bank of China	Yes	China	12.8.2015	2020	No
Cathay United Bank	N/A	Taiwan	11.4.2014	2020	No
Industrial Bank of Korea	Yes	South Korea	14.3.2013	N/A	2020
Mega International Commercial Bank	Yes	Taiwan	23.6.2015	N/A	2020
Siam Commercial Bank	Yes	Thailand	23.4.2012	N/A	2020

Appendix 2: Hierarchies of the Themes Coded from CoP Perspective in NVIVO



Appendix 3: Themes related to Banks' Balancing Practices across Banking and Unbanked CoPs



Appendix 4: Examples of Coded Quotes from from Archival Resources using Communities of Practice Perspective

Equity investments in Banking CoP Risk-taking of Banks Impacts of participating in Banking CoP through equity investments after military coup	IFC, a member of the World Bank Group, has agreed to provide Yoma Bank Ltd. with a $5 million convertible loan and help the lender improve its risk management and corporate governance in support of the bank's growth strategy (International Finance Corporation, 2014). "In fact, Myanmar was even in the 'black-list' when the IFC was supplying loans to Yoma, which means being on the list is not necessarily critical for individual banks," the analyst added. The so-called grey list refers to the strategic weaknesses list covering high-risk states, while the more serious black list is reserved for countries with no action plan (Chau, 2019). An affiliate of GIC ("GIC"), Greenwood Capital Pte Ltd, and Norfund, the Norwegian Investment Fund for Developing Countries, have acquired equity stakes in Yoma Bank, one of the largest private banks in Myanmar. Once the transactions are completed, the two parties will become the second and third foreign shareholders in Yoma Bank after International Finance Corporation ("IFC"), who converted its convertible loan into equity in May 2019 (Norfund, 2020). Justice For Myanmar condemns Yoma Bank's loan to Pinnacle Asia, a company owned by the daughter of war criminal and coup leader Senior General Min Aung Hlaing. The 1.8 billion MMK loan was granted in 2020 to finance the construction of towers for Myanmar military-controlled mobile operator Mytel.... At the time the loan was granted, the International Finance Corporation (IFC) of the World Bank Group held 5% equity in the bank. In April 2020, Norway-backed Norfund and Singapore-backed GIC invested in the bank and the three institutions control a combined 34% of the total shareholdings. The loan to Pinnacle Asia went against the recommendations of the UN Fact-Finding Mission to cut ties with the military and their conglomerates, including "their subsidiaries and business relationships." … In response to questions from Bistandsaktuelt, Norfund spokesperson Ylva Lindberg stated that Yoma Bank will now use the UN Fact-Finding Mission as part of its standard background checks. However, she went on to say that "the military in Myanmar has a very extensive role in society and business, which makes it a demanding exercise to set a limit for indirect connections to the military… It is difficult to draw a clear line for how far the responsibility extends." Norfund (Justice for Myanmar, 2021)	International Finance Corporation, private sector arm of World Bank, Greenwood Capital (Singapore) and Norfund (Norwegian Investment Fund), Yoma Bank (Myanmar)

Appendix 4: Examples of Coded Quotes from Archival Resources using Communities of Practice Perspective (Continued)

Boundary Objects for Joining Banking CoP Under this code, we explore different boundary objects (either tangible or visionary) used by banks to negotiate their entries to Banking CoP		
Shared experiences and mutual growth as visionary boundary objects	I think the economic difference between Taiwan and Myanmar is about 20 to 30 years. So if we look at Myanmar, SME sector here is like the SME sector in Taiwan 20 years ago. I definitely think that Myanmar will not need to spend 20 or so years to reach the current SME level of Taiwan because Myanmar will make progress quicker. Local SMEs in Myanmar are facing the same difficulty of getting financial support at current just as their counterparts were 20 years ago in Taiwan (Chan, 2016).	E. Sun Bank (Taiwan)
	The banking industry in Myanmar now is similar to what it was in Taiwan 40 years ago. We have experience in this kind of environment and would like to share our experience through training to staff. We will make proposals to CBM (Htun, 2016).	Cathay United Bank (Taiwan)
Technical expertise as boundary objects	BTMU said it plans to improve the country's financial infrastructure, working with local banks and the Central Bank of Myanmar. The deputy governor of the Central Bank of Myanmar said the foreign banks would provide liquidity for economic development, technical skills for local banks, as well as better financial services necessary for foreign investors (Richards, 2014).	Bank of Tokyo-Mitsubishi (Japan)
	E. SUN is the number one brand for SME as well as the pioneer and front-runner in digital banking field in Taiwan. We can help local banks, which would like to develop SME banking business in Myanmar. We can also share the modern business model for developing a good digital banking experience for both customers and businesses, and … create a triple win for the development of Myanmar (Chan, 2016).	E. Sun Bank (Taiwan)
	At the opening ceremony on Friday, Chinese Ambassador Hong Liang hoped the ICBC Yangon branch to become one of the most powerful and efficient foreign banks in Myanmar and called for promotion of financial and monetary cooperation between China and Myanmar, as well as construction of the China-Myanmar Economic Corridor … Daw May Toe Win, director-general of the Foreign Exchange Management Department of the Central Bank of Myanmar, pledged to continue strengthen banking supervision by guiding foreign banks such as ICBC in the country to create a better regulatory environment for the development of Myanmar's financial industry (Xinhua, 2018)	Industrial and Commercial Bank of China (ICBC) (China)

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Entrepreneurs' Human Capital Matters for Venture Capital Investment: Evidence from China

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Entrepreneurs' human capital matters for venture capital investment: Evidence from China *

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Abstract

From a human capital perspective, we document the "assortative matching" using a hand-collected Chinese VC investment dataset: the more (less) experienced VCs match with better (worse) companies with more skilled founders. This result is robust after controlling for potential selection issues. Moreover, we show that a policy that exogenously increases the local supply of talented entrepreneurs mitigates the assortative matching pattern. The moderating effect is more profound in human-capital-intensive industries and provinces with weaker economy. Finally, the matching pattern is also positively related to the exit performance of the VC's portfolio companies.

Keywords: Entrepreneurship, Venture Capital, Human Capital, China

JEL Classification: F22, G24, L26, O53

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1 Introduction

New startup firms, especially the ones with new technology, are important engines for economic growth. However, nurturing entrepreneurship needs both human capital and financing, and an extensive literature shows that entrepreneurial firms face difficulties of access to external finance due to high probability of failure, lack of collateral and internal funds, as well as potential agency problems (e.g. Akerlof (1970); Hall and Lerner (2010); Jensen and Meckling (1976)). Venture Capital (thereafter VC), as independently managed capital focusing on equity investments in privately held early-stage and high-tech companies, can help to alleviate the problems of financing innovative entrepreneurial firms. While the existing literature has long argued the valued-added service that VCs can provide (Sørensen (2007); Da Rin, Hellmann and Puri (2012); Bernstein, Korteweg and Laws (2017); Bertoni, Colombo and Grilli (2011)), empirical economists have had paid relatively little attention to how VCs implement their screening process. This paper fills the gap by providing evidence on that human capital of entrepreneurs is among the most important driving factors in regards to VC deal formation using an unique manual-collected dataset from China. Using an exogenous shock on human capital, we establish causality of founder characteristics on investor decisions.

We focus on a unique setting, namely VCs making investment in China, for a couple of reasons we believe it is beneficial for testing our hypothesis. First, in recent decades, the diversification of VCs has greatly increased and sizeable portion of the investments is conducted towards emerging markets (Jenner and Suchard (2013a)). China, as one of the most active economies, is a natural target of foreign VCs. According to Aizenman and Kendall (2012), China has attracted the largest international VC inflows in the whole world. The VC investment in China has increased from 1.2 billion (USD) in 1999 to 302 billion (USD) in 2018[1]. China's VC industry experienced a rapid growth since 1990s, and it became one of the major funding resources for Chinese entrepreneurial firms. Newly started enterprises, particularly in the high-tech sector, highly rely on foreign VCs (Wang and Wang (2011)). Second, among other human capital characteristics, we focus on a special type of trait of entrepreneurs which conveys important signals of the human capital: the overseas work or study experience. China has the largest number of overseas students and returnees, the number of Chinese overseas students has increased from 144,500 in 2007 to 608,400 in 2017. Returnee entrepreneur is one of the most important source for

[1] See report from Fortune.

innovative start-ups founders. Existing economic theories predict that the overseas experience, together with other human capital characteristics, could be important for entrepreneurs to be identified (Rajan (2012); Rajan and Zingales (2001); Bernstein et al. (2017)) and contribute to firm's sustainable growth (Hall and Jones (1999)). What is more, the Chinese government has introduced the policy to attract highly-talented emigrants to set up business with the purpose to foster entrepreneurship and therefore promote local economic growth. The policy was introduced at provincial level at different time, starting from mid-1990s, which provides an exogenous shock on the local supply of highly-skilled entrepreneurs. We can take the advantage of the introduction of the policy to examine the effect of attracting highly-skilled entrepreneurs on VC investment decisions.

In this paper, we provide new insights on the following open questions in the literature. First, whether and how start-up characteristics determine the VC investor decisions. Second whether this matching based on the human capital leads to more success of entrepreneurs. Testing those hypotheses are challenging and one of the common challenges is that there are omitted variables such as attributes of both venture capitalists and start-ups (Da Rin, Hellmann and Puri (2012)). This problem is exacerbated in our setting because existing data sources of cross-border VC investment deals contain limited information of start-ups' and venture capital firms' characteristics. Efforts were made in earlier studies from the side of venture capitalists to address this issue (Bottazzi, Da Rin and Hellmann (2008); Gompers et al. (2005); Dimov and Shepherd (2005); Zarutskie (2010)), there are however much fewer attempts from the start-ups side (Kaplan, Sensoy, and Stromberg (2009); Bernstein et al. (2017)). In order to address these issues, our paper employs a manually collected dataset of Chinese venture capital investments. We hand-collected information on the foreign education, work experience and other characteristics of founders of all start-ups invested by VCs in our sample. We form a sample with 1140 startups, and 2417 VC investment deals from the period 1994 to 2013. Our dataset has an advantage over previous studies on Chinese venture capital and returnee entrepreneurs not just in terms of a larger number of observations, a wider range of coverage of industries but also in the richness of entrepreneurial characteristics (Liu et al. (2010); Jenner and Suchard (2013a); Cumming et al. (2015); Qin, Wright and Gao (2017)).

Our data approach enables us to separate the effects of entrepreneurial characteristics by the hand-collected data on individual founders' backgrounds. First, overseas experience benefits the accumula-

tion of individuals' knowledge, returnee start-ups could have better operational capabilities. We use whether the entrepreneur has foreign education or work experience to measure this and it is our primary variable of interest in human capital. Meanwhile, we also collect information on founders' managerial, entrepreneurial or political experience. In regards to the human capital of venture capital firms, we follow Gompers et al. (2005, 2008) and Sørensen (2007) to construct variables which measure the experience of venture capital firms from the dataset.

More importantly, even if we are able to separate the effect of some traits of the entrepreneurs, there will always be other factors that are unobservable or difficult to measure. For example, high-quality candidates of entrepreneurs might choose to establish their own companies because of the booming macroeconomic condition, or because they come from the region that has a deep history of entrepreneurial spirits. Those factors can also directly impact investor decisions. To address this issue, we employ a quasi-natural experiment that exogenously increases the supply of high-quality entrepreneurs to establish the casual inference of start-ups characteristics on VC investment decision. This identification strategy addresses omitted variable bias by isolating variance in the number of high-quality entrepreneurs by supply constraints. More specifically, we employ a difference-in-difference framework to investigate how VC investors react to the increase in the exogenous supply of high-quality entrepreneurs. These policies were not adopted simultaneously by all the provinces. This staggered nature of these policies reduce the possible bias brought by the differences in unobservable factors between control and treatment groups since a typical VC investor belongs to both control and treatment group depending on the year.

Given the geographic focus of our paper is China, it is natural for us to examine the investment decisions of domestic VCs, namely the investment made by Chinese venture capital firms. In the early days of Chinese VC market, foreign VCs was dominating. Until early 2010s, the domestic and foreign VC investments were still close in their total deal value (Figure 1). After that, domestic VCs were taking off and becoming the major player in the market. Meanwhile, the summary statistics (Table 5) reveals that domestic VCs are those ones with less experience compared with their foreign rivals: they appear to be younger, backing less numbers of portfolio companies, lagging in experience measures and lacking tolerance in failure. Moreover, they focus start-ups with fewer rounds and total number of investors. Therefore, the importance in volume and inferiority in experience motivate our focus on a better understanding of domestic VCs investment decisions and the consequence.

We begin by evaluating how human capital traits of start-up founders influence VC investment decisions from the perspective of domestic VCs. We find that human capital variables are negatively correlated with the presence of domestic VC investors. This result remains significant after controlling for a variety of measures of VC experience (Table 7). This finding extends Sørensen (2007) by unfolding base on which variables sorting in the VC market occurs: namely the returnee and entrepreneurial experience that represent the quality of the management team. We further employ several econometric approaches to mitigate the concern that the empirical finding is merely driven by the selection effects from only one side of the matching pair. After controlling for the selection issues, the effect of assortative matching on the VC deal formation still prevails (Table 8).

We then move forward to investigate whether the implementation of the policy impacts the investment decision of domestic VCs. First, using aggregate province-level data, we show that the number of entry firms in total and in high-tech industries raise up after the policy takes effect. Second, the foreign VCs investments also increase dramatically following the implementation of the policy (Table 9). These results provide strong evidence that the policy indeed facilitates local entrepreneurship and attracts VC financing through enhancing human capital. After validating the effect of the policy, we then investigate the effect of the policy on the domestic VC investment decision. We find that after the policy takes effect, the probability of domestic VCs that makes investment in experienced entrepreneurs increases (Table 10). Moreover, this reserve in the matching pattern is more profound in returnee-intensive industries and less developed provinces (Table 11, 12).

The next question is whether the investment strategy based on the human capital of founders leads more success. Following previous studies (Gompers et al. (2005); Sørensen (2007); Bottazzi, Da Rin and Hellmann (2008)), we measure performance of start-ups by a successful exit such as acquisitions, Initial Public Offerings (IPOs) or trade sales. In regards to the identification of matchings on exits, a regression of exits against the presence of a domestic VC shows up an insignificant correlation which is consistent with prior findings[1]. As illustrated in Sørensen (2007), however, this OLS regression with missing company characteristics has endogeneity because unobserved traits of start-ups in the error terms might be positively related with the matching process. We therefore address this issue in two

[1] Jenner and Suchard (2013a), Table 7, Column 4.

ways. First, we estimate the model within an instrumental variable framework. The key identification assumption is that founders' human capital characteristics are more likely to affect the deal formation at the stage of matching than the company's outcome directly at the later stage. We employ the human capital variables as the first stage instrument. We find that the domestic VC investments reduce the likelihood of successful exits significantly once the sorting based on human capital traits is considered in the matching stage, i.e. they are less likely to match up with better entrepreneurs (Table 13). Second, we present the interact effects between the human capital and the domestic VCs variables (Table 14). The positive and statistically significant interaction terms indicate that exit outcome increases in its likelihood when domestic VCs match up experienced entrepreneurs.

Overall, our findings emphasize the importance of human capital of start-ups in the matching stage and sorting based on human capital appears to improve performance. Also we find that quality measure of entrepreneur is the most important factor that drives the formation of VC deals. There findings have rich implications for start-ups, VC industry practitioners and policy makers. We show that what characteristics a venture capital firm looks for from a start-up and what a VC could do in the selection stage so as to keep its efficiency. In many developing countries, there is increasing number of returnees but talented ones are still a scare and valuable resource. Regulators could implement policies to attract those to start new business (Giannetti et al. (2015)). Our result indicates a possible solution for the domestic VCs' inferior exit outcomes due to the assortative matching.

Our paper contributes considerably to several areas of the existing literature. First, this paper is related to the literature which studies the VCs' ability to screen (selection) versus value-adding services provided by VCs (treatment). There is a long-lasting debate on whether the exit outcome is driven by selection (Baum and Silverman (2004); Chemmanur et al. (2011)) or treatment effects (Bertoni et al (2011); Davila et al. (2003); Colombo and Grilli (2010); Engel (2002); Hellmann and Puri (2002))[1]. As pointed out by Da Rin et al. (2013) that, in comparison with the treatment effects, deal selection of VCs is under studied. Among the few empirical evidence which examines the importance of selection,

[1] On the one hand, VC investors could be active in monitoring and controlling the ventures they invest. Early studies such as Sahlman (1990) and Lerner (1995) show VCs are involved in activities such as sitting on board of directors, advising on funds raising and recruiting management teams. Those value-adding services greatly benefit VCs' portfolio companies and influence their exit performance (Gompers and Lerner (1998), Sapienza et al. (1996), Hsu (2004), Sørensen (2007)). On the other hand, VCs are known as their ability to screen the market to find entrepreneurs with high potential (Gompers and Lerne (2001), Da Rin et al. (2013), Bernstein et al. (2017), Gompers et al. (2020)). Thus the outperformance of VC backed firms might be simply due to the fact that they are better ones.

Sørensen (2007) provides evidence that both sorting (selection) and influence (value-added treatment) are important determinants of the success. Kaplan, Sensoy, and Strömberg (2009) studies the relative importance of start-ups' business lines and management team. Their conclusion is that the management team has a significant turnover while the business line remains stable overtime. More recently, Bernstein et al. (2017) find that the in early stage, information that captures human assets such as management/founder team is of the greatest importance for VCs to select among deals. Gompers et al. (2020) conduct survey study among institutional VCs and they find VCs in general consider deal selection as the most important determinant to value creation. And in deal selection stage, management team is seen as more important than the entrepreneur's technology or product.

Our paper adds to this strand of literature by discovering important human capital factors, which are unknown in the literature, base on which sorting occurs from an emerging VC market perspective. We provide evidence on that human capital variables matters at matching stage as well as during their exit. Our finding is consistent with Bernstein et al. (2017) and Gompers et al. (2020) that VCs consider management team as their primary focus when making investment decision. It is less consistent with Kaplan, Sensoy, and Strömberg (2009) who find that management team is less important than the business idea over the life time of a successful exit of a VC investment. By unfolding previously unobserved variables, our result also complements Sørensen (2007) that the sorting based on human capital characteristics of VCs contributes, if not more than the treatment, to exit performance in a developing country. In this regard, our paper is also broadly related to prior studies of VC matching that reveal importance of social capital on the matching between entrepreneurs and venture capitalists. Among others, bilateral generalized trust, ethnicity and educational background have shown to be important determinants of deal formation. However, matching based on a higher level of bilateral trust, similarity in ethnicity, network ties or background often lead to inefficient outcomes (Bottazzi et al. (2016), Bengtsson and Hsu (2015), Hedge and Tumlinson (2014)).

Second, using a quasi-nature experiment as an exogenous shock, we show a positive economic consequence of international human capital inflows: we document an increase in the entry of new firms in the high-tech industries and a similar trend in foreign VC investment; at the same time, domestic VCs are more likely to invest in high-quality entrepreneurs given a surplus supply of good founders in place. Thus our finding provides new insights on the heated debates of the political and economic

effect of migrations (Becker and Fetzer, 2016; Halla et al., 2017; Dustmann et al., 2019; Coniglio and Brzozowski 2016). We complement for instance, Burchardi et al. 2019 that directly funding return migration can be a potential mechanism through which migration benefits local economic growth: not only the return migrations attracts foreign VCs investments but also it stimulates the local VC investments and helps overall entrepreneurial financing activities to flourish (Samila and Sorenson (2011)). Our finding also broadly relates the migration-network-driven VC investment literature (Sorenson & Stuart, 2001, 2008; Balachandran and Hernandez 2021) that return migration can be strategically valuable for VC firms given their overseas experience and local knowledge. Moreover, the policy introduced by local government aims to attract high-quality immigrants exhibits similar effect on the entrepreneurial financing environment in the local regions as in Fehder and Hochberg (2014, 2015). The findings we document may be useful for policy makers considering the benefits of policies for the local entrepreneurial economy, as our results suggest a crucial role for human capital related policy in facilitating the emergence of not only mature foreign investors but also local early-stage investor community in their regions.

In addition, our paper is also connected with literature in business that studies the relative importance of different characteristics of startups when VCs access and select among entrepreneurs. Baum and Silverman (2004) find that among three types of characteristics of entrepreneurs, respectively social capital (alliances), intellectual capital (patents) and human capital (top management), human capital effects are dominant in VC financing decisions. Their conclusion lends support to our finding on the sorting based on human capital variables. In regards to the effect on the firm performance, few papers find strong evidence that screening influences performance positively. Bertoni et al. (2011) shows VCs provide positive value-adding services and help high-tech firms' growth from a domestic setting. They claim the selection is negligible within their setup. Based on VCs samples of European countries, similar results can also be found in Croce et al (2013), Colombo and Grilli (2010) and Engel (2002). In Lahr and Mina (2016), they find VCs select targets based on patent signals thus it appears to suggest a positive correlation between the patent output and the probability of VC investment. On the other hand, the patent-based screening leads to a decrease in the innovation output. Our paper differs from previous literature as follows: first, most of the studies are conducted in U.S. or Europe, our paper is among the first ones which look at how VC deals are formed in an emerging market with a distinct investment environment. Second, the result of our paper confirms the importance of human capital in the matching process and moreover this effect also contributes to the exit performance.

Finally, our paper is distinguished from studies with similar geographic focus, more specifically, the VC investment in emerging nations. Prior studies show the presence of a foreign VC is associated with a higher probability of a successful exit and also the foreign VC backed entrepreneurial technological firms has a higher tendency to IPO overseas. In this regards, the most relevant papers are Güçbilmez (2014), Jenner and Suchard (2013b) which provide empirical evidence in China setup. These studies appear to suggest that the foreign VCs have a strong influence on the IPO location and start-ups' internationalization strategy. Another strand of literature shows syndication between foreign VCs and domestic/joint venture partner is positively correlated with the exit outcome. Supportive evidence are obtained by Jenner and Suchard (2013a) on a sample of VC deals in China, Khurshed et al. (2020) and Chemmanur et al. (2016) on cross-country samples. They argue the greater expertise of foreign VCs is one of the most important determinants of the successful outcome. While controlling for potential selection bias, most studies mainly focus on the value-added service (treatment) of foreign VCs, and have not considered much about how the deals are formed because of the limitation of dataset. Our study fills this gap by providing the first examination on how VCs select deals in emerging nations whether and how the screening influences the exit outcome. Our results suggest that the sorting effect which is based on signal of human capital can not be neglected and is of first-order importance in determining the deal formation and exit outcome.

The paper is structured as follows. Section two develops some theoretical arguments. Section three describes the data and sample. Section four provides summary statistics. Section five shows the relationship between VC investment decision and human capital characteristics. And then we addresses the selection issues. Section six shows the policy effect on the VC investment decision. Section seven shows the how human capital characteristics relates to the exit outcome.

2 Hypothesis Development

It has been well established that human resource is one of the most important resource of a firm (Wernerfelt (1984); Barney (1991)). The characteristics and past experience of start-ups founders in many ways shape the firms' performance (Dencker and Gruber 2014), investment decision, stock market performance (Fahlenbrach 2009), corporate governance (Li and Srinivasan 2011), disclosure

behavior (Anderson et al. 2009), financing policy (Cronqvist et al. 2012), corporate social responsibility decision (Cronqvist and Yu 2017), capability of attracting new fundings (Ko and McKelvie 2018), entrepreneurship entry (Sahasranamam and Nandakumar 2020) and ability to identify business opportunities (Gruber et al. 2015). Among those characteristics, it has been shown that education (Ko and McKelvie 2018; Sapienza et al. 1997), overseas experience (Qin, Wright and Gao 2017), riskiness of the opportunity (Dencker and Gruber 2014), prior entrepreneurial experience (Westhead and Wright 1998; Cumming et al., 2016; Nahata 2019), business experience and knowledge (Staniewski 2016; Segal et al. 2010), political endowment (Jia et al. 2021), technological background (Westhead 1995), founders' competencies (Chandler and Hanks 1994), the style of leadership (Peterson et al. 2012) are important human-capital related variables.

Venture capital are known being "smart": they screen good investment opportunities and select firms with good potential (Gompers and Lerner 2001; Amit et al., 1998). Previous literature has documented the importance of entrepreneurial characteristics on VC's investment decision (Shane and Stuart (2002), Bernstein et al. (2017), Gompers et al. (2020)). More related to our paper, Sørensen (2007) and Bottazzi et al. (2008) find that more experienced VCs tend to match up with better companies. And this sorting can also occur dynamically, Cumming and Dai (2013) find that startup switch lead VCs to more experienced ones when they grow up. Moreover, in a recent paper, Fu et al. (2019) theoretically argue and empirically show that startups and VCs with similar ranking in their peers are more likely to match using Chinese VC data. Following this strand of literature, foreign VCs with prominent reputation and experience, are more capable of identifying startups with high-quality founders and matching up with them. On the other hand, domestic VCs which lag in their experience compare to foreign VCs at least in our sample, we thus predict that the less experienced VCs are less likely to match up with better entrepreneurs.

Hypothesis 1: *Domestic VCs are less likely to invest in startup with high quality entrepreneurs.*

In existing literature, it is rare to observe exogenous shock to human capital in a short period of time. Most of studies, resort to long-span historical data within the context of mass migration. Burchardi et al. (2019) find that, using U.S. county-level data, an increase in the residents with ancestry from a given foreign country is positively related to the local firm's FDI in that foreign country. Tabellini

(2020) also find beneficial effects of immigration on local community such as employment and industrial production using variation in European immigration to U.S. between 1910 and 1930. In addition, there is a growing literature document a positive impact of high-skilled immigrants on innovation, investment and trade following the inflows of immigrants (Moser et al., 2014; Bernstein et al., 2018; Bahar et al. 2020; Choudhury and Kim 2019). Based on their findings, there should be a positive impact to the local VC investment following the exogenous shock at least in the short run. Local VCs, given the surplus in the supply of high quality entrepreneurs, might increase its likelihood to match up with high quality entrepreneurs and thus reserve the "assortative matching" pattern. Second, it is however pointed out by Wright (2007) that those returnees might already have well-established connections with foreign VCs prior to their return. Prior work has already documented a network mechanism that immigrant entrepreneurs can play within the portfolio companies that a VC invest locally. After entering the network of the portfolio companies that the VC previously invested, the immigrants can provide information and connections. Indeed, recent findings in Balachandran and Hernandez (2021) suggest that U.S. VCs, through investing domestically in immigrants entrepreneurs to gain knowledge and network, facilitate their investment in those immigrants' homeland. Meanwhile, this network can extend beyond the geographic limitation and VC can invest through a special vein, namely the returnees entrepreneurs, as a subset of immigrants. This is consistent to our analysis that the foreign VC investments increase following the implementation of the polices (See section 7.2). That is to say, reverse in the assortative matching for domestic VCs might not necessarily occur. To sum, whether local VCs reverse their investment behavior and become more likely to match up with high-quality entrepreneurs largely remains as an empirical question and therefore, we have the following testable hypothesis:

Hypothesis 2: *The increase of high-quality entrepreneurs supply might induce domestic VCs to increase or decrease or leave unaffected their investment in high-quality entrepreneurs.*

We then move to examine whether investing in high-quality entrepreneurs translates into better exits. On the one hand, classic human-resource view predicts a positive correlation between the investment outcomes and human capital characteristics. Having studied or gained managerial skill and experience aboard, returnee entrepreneurs might apply the knowledge about capital markets and management practice that they have learnt in foreign countries. And the adoption of the management practice can bring productivity-enhancing effect (Bloom and Van Reenen (2007); Jones and Romer (2010); Giannetti

et al. (2015)). In addition, entrepreneurship and management literature document a positive correlation between international experience and knowledge with firms' future growth (Wernerfelt (1984); Penrose (1959)). Returnee entrepreneurs with overseas experience can allocate the knowledge-based resources more effectively such as to create a competitive advance and thus lead to a better exit outcome relative to their local peers.

On the other hand, it is however possible that having lived overseas for years, it is difficult for returnee entrepreneurs to build up local networks and connections. Also whether or not returnee entrepreneurs could effectively adopt their management practice or professional knowledge in an environment with completely distinct legal institutions is debatable. Thus, whether and how investing on high-quality entrepreneurs, particularly returnee entrepreneurs, affects exits is an empirical question and could have important implications for emerging markets.

It is also not clear either from the perspective of VC that whether a match between domestic VCs and returnee entrepreneurs might lead to a better or worse exit. First, Bottazzi, Da Rin and Hellmann (2008) document that more active VCs is positively related to more success of their portfolio companies. Milosevic (2018) find similar results using data from French VC market that VCs' human capital variables such as professional experience and education appear to be positively related to the exit success of VC-backed firms. Hochberg et al. (2010) also document that better-networked VCs have on average better exit outcome and their portfolio companies also have a higher survival rates. Thus the domestic VCs with less experience might lead to an inferior outcome. Second, Jenner and Suchard (2013a) find that a higher exit rate can be achieved through a collaboration between foreign and domestic VCs within the China setup. To sum, we have the following hypothesis to test:

Hypothesis 3: *Investing in high-quality entrepreneurs might lead to better or worse exit outcomes of domestic VCs.*

3 Data and Sample

The VC investment deals information is obtained from Zero2IPO, which is the main data source for VC studies on the Chinese market. It contains VC investment deals in China by both domestic and foreign VC[1] companies from 1994 to 2013. Each investment deal contains information about the name and general background of the VC investor and the targeted startup. To ensure the data quality, we exclude the deals without investment amount or investment stake information. We also dropped those VC deals with missing values in geographical locations and those startups which are not located in mainland China. Finally, we form a sample with 1141 startups, and 2417 VC investment deals from the period 1994 to 2013.

We hand-collected information on the foreign education and work experience of founders of all startups invested by VCs in our sample. The founders' background information for the startups in our sample is obtained from the companies' websites or other news and internet channels. We identify the firm founder as a returnee if she has foreign education and/or foreign work experience. We also obtain the domestic education background and professional experiences such as previous CEO, managerial, entrepreneurial or political experience of the founders. Among the five measures for entrepreneurs' human capital, returnee reflects foreign experience, CEO, manager, and entrepreneur reflect professional experience, and political reflects political linkage and network that is crucial for doing business in China. The positive influence of foreign or professional experience on venture investment and success have been well documented previously in the literature. A recent paper Wang and Wu (2020) shows portfolio companies that backed by politically-connected VC have a higher chance to obtain IPO approval. Therefore we include this political experience as one of the five measures of human capital. Besides human capital characteristics, we also include variables that capture the nature of the startups. We have three dummy variables to capture startups' levels of development: early, growth and late stages. The early-stage company is the one just started or at the seed. The late-stage company is mature and close to an exit. And the company is a growth-stage company when it is at the expansion. In our sample, roughly 30% companies are at early stage and 61% are at growth stage. Based on National Industrial Classifications, we redefine the industrial categories into nine major industry groups: "Internet & Computers," "Communications & Electronics," "Business & Industrial," "Consumer," "Biotechnology & Healthcare,"

[1] Most of the foreign VCs are from the U.S., for instance, Sequoia, IDG Capital, Matrix Partners, etc. The dataset contains information on whether the VC is a foreign, domestic or joint capital.

"Business & Services," "Finance," "Energy," and "All Others." More than half of the investments are made to companies in Internet & Computers and Communications & Electronics industries.

The dataset enables us to identify whether the venture capital firm is Domestic or Foreign. Based on these information, we construct variables to examine the patterns of investment decision made by domestic (foreign) VCs and the exit outcomes. As argued in previous studies, VCs' experience matters for both matching and exit outcomes. Therefore, it is important to control variables that capture the experience of VC. Following Sørensen (2007) and Gompers et al. (2008), we construct several measures for VC firms' experience such as age, number of backed-companies, specific industry experience and total experience. Meanwhile, whether investing through a syndication is also related to the investment decision and exits. We have two variables that present the level of syndication: a dummy variable indicates the investment is not made by a single investor and a dummy variable equals one if there are at least one foreign VC and one domestic VC invest in the company at the same time. Inspired by Tian and Wang (2014), we also construct VCs' failure tolerance defined as the investment duration in its eventually failed projects up to a given year.

Later in the paper, we also examine the effect of matching on exit outcomes. The variable we use to measure exits is a dummy variable equals one if the portfolio firm has been exited via an IPO, acquisition or trade sales. This is one of the most commonly used measures of investment outcomes in VC literature (Gompers and Lerner (2000), Brander, Amit, and Antweiler (2002)). Following Jenner and Suchard (2013a, 2013b), we construct variables to capture the VCs' level of success by taking the maximum of several features across the set of VC investors for a given company. Those include the maximum number of exits achieved, the maximum number of provinces invested and the maximum average fund investment size. Meanwhile, the total number of rounds in which the company received and the total number of unique GPs that have invested in the company could also influence the probability of firm's exit. We use the growth rate of GDP and FDI of a province in a year to account for factors driving economic development and investment climate at provincial level in China. In provincial level analysis, we also control for GDP per capital and percentage in the percentage of labor force that work in the service sector. The detailed description of all variables regarding the definitions and the corresponding data source is in Table 1.

4 Summary Statistics

Table 2 reports the summary statistics for the sample. A little less than half of the investments (44%) are made by domestic VCs. A typical venture firm in our sample has 5.4 years in age, backs 28 number of companies, has made about 10 industry-specific deals and 36 general deals upon the time of investment. 36% of the investments have an exit. 36.7% of the deals are made to founders with overseas background, 23% are made to founders who have managerial experience, 13.6% and 9.4% are made to founders who have previous entrepreneurial and CEO experience respectively, only around 2.6% investments are made to founders with political background. Also, it is common to make investments via a syndication (64.3% in our sample) while the syndication is less likely to occur between a foreign and a domestic VC (15.7%). Table 3 reports the industrial distribution of VC deals by the types of VCs and founders. One can observe that investments made by VC are clustered in the following two industries: Internet & Computers and Communications & Electronics industries. And those two industries are also the ones which returnee entrepreneurs obtain the most VC financing. Table 4 reports the geographical distribution of VC deals by VC types and founder types. From this table, we can observe first that Beijing is the most popular region that attracts VC investments; second, only a few provinces such as Beijing and Shanghai have more foreign VC investments than domestic ones; in terms of founder type, we find again, the popular regions that attract most VC investments are also the place in where the returnees obtains financing; the only place that returnees obtain more VC financing than local entrepreneurs is Shanghai.

To motivate our dependent variable, we conduct a univariate test by dividing our sample into deals made by domestic and foreign VCs. In total, deals are equally split between the two types of investors. This weight is reasonable as our sample focuses on the early days of Chinese VC market when domestic VCs investment has not yet taken off. Two types of investors indeed show up distinctions in their characteristics and patterns, we conduct and report the simple mean test in Table 5. First, 47% of the deals made by foreign VCs are made to returnee entrepreneurs while for domestic investors, the percentage is merely 24%. We find similar patterns from the other measures of human capital of entrepreneurs except for founders with political experience: e.g. 30% of the foreign VC deals are made to start-ups with ex-CEO experience while only 15% for domestic VCs deals; it is however the opposite for investing to founder with previous political experience: 3.5% domestic VC deals are made to founders who use

to work as officials in government while for foreign VCs, the percentage is 1.8%. In regards to VCs' experience measures: we find that in general foreign VCs are more experienced than their domestic rivals: they tend to have entered the market earlier (age), have backed larger number of startups and have more experience in specific industries as well as general experience. In terms of co-investing behavior, foreign VCs are more likely to invest with other VCs: 71% of the foreign VCs' investment is made through a syndication. Moreover, foreign VCs are more likely to make investment to startup in its early stages while the probability of involving in a growing-stage firm is higher for domestic VCs. In addition, measured by the investment duration in its failed projects, foreign VCs on average have a higher level of failure tolerance than the domestic VCs.

In short, even though domestic VCs are less experienced investors, less likely to invest in early-stage startups and match up with skilled entrepreneurs, have lower failure tolerance than foreign VCs, they still take up about half of the entire investments in our sample and become the major financing source for startups in Chinese VC market later (Figure 1). Therefore, from the volume perspective, it is important to understand their investment behavior, especially whether and how matching based on human capital matter for the deal formation and exit outcomes. Second, focusing on domestic VCs also benefit us from the aspect of econometric design. Suppose we follow prior studies such as (Jenner and Suchard (2013a, 2013b), Güçbilmez (2014)) to focus on foreign VCs, even if we find a positive relationship between deal formation and exit outcome, it would be difficult for us to generalize the conclusion that this finding applies to all types of VCs. In addition, shifting the focus from the foreign VCs mitigates the concerns of alternative explanations being a cross-border investment such as cultural distance or trust. Also given the fact that foreign VCs obviously have advantages in experience and skills, it would be even more difficult to disentangle the parts contributed by post-investment treatment and human capital based selection which is our primary interest. Likewise, the advantage of focusing on domestic VCs is that if the results showing the venture success rate is higher when domestic VCs investing in entrepreneurs with high quality, it is more likely due to entrepreneurs' human capital.

We construct four measures for domestic VC investments. Measured at single investment deal level, we have a dummy variable that equals one if the investment is made by a domestic VC investor. Measured at the same investment date, we have a dummy variable that equals one if the investment is made by at least one domestic VC investor at the same investment date; we also construct the proportion of

domestic VCs among all the VCs investing in the portfolio firm at the same investment date; lastly, a dummy variable that equals one if the investment is only made by domestic VC investor(s) at the same investment date. The summary statistics of those four measures is reported in Table 2.

5 Assortative Matching and Entrepreneurs' Human Capital

5.1 Multivariate Analysis

We present the empirical results of matching of domestic VCs in Table 7. The dependent variables are the four measures of domestic VCs' investments: Domestic, I(At least one DVC), I(only DVC) and Prop(DVC). The first three variables are binary, thus we employ a Probit model in the first three columns while we use a Logit model to estimate the last specification. We therefore have the following specification:

$$Y_d = \alpha + \beta_H H_c + \beta_E E_i + \beta_C C_d + \beta_X X_c + \eta_s + \lambda_t + \nu_p \tag{1}$$

Variables indexed by d vary at every deal, variables indexed by i vary at every investor whereas variables indexed by c vary at every company. Y_d is the measure of the presence of domestic VCs: Domestic, I(At least one DVC), I(only DVC) and Prop(DVC), of the investment d in company c by investor i. H_c is the vector of human capital measures for startup founders: Returnee, CEO, Manager, Entrepreneur and Political. E_i is the vector of VC experience measures: No. of backed companies, total experience, industry experience and VC-Age. C_d is the vector of deal characteristics such as syndication. X_c is a vector of variables which measures characteristics of company c such as stage dummies. In all specifications, we control for year (λ_t), industry (η_s) and region (ν_p) fixed effects.

The main message delivered is consistent with the univariate test: human capital characteristics are important for the deal formation. More specifically, domestic VCs are less likely to match up with high-skilled entrepreneurs such as those with overseas and entrepreneurial backgrounds: e.g., being a domestic VC reduces the probability to invest in company with a returnee entrepreneur by about 60%; or if the investment is made with at least one domestic VC, the probability to invest in returnee entrepreneurs would be reduced by 70.6%. The coefficients of other human capital characteristics such as CEO and manager also show up negatively but are not statistically significant from zero. The political experience, however, does not seem to influence the process of deal formation neither. The negative

correlation between the presence of domestic VCs and human capital measures confirms the finding in Sørensen (2007) that more (less) experienced VCs invest in better (worse) companies. This lends strong support to our Hypothesis 1 that the 'assortative matching' which have been documented in the U.S. VC market also occurs within an emerging VC setup. Our result extends Sørensen (2007) by unfolding base on which variables sorting in the VC market occurs: namely the returnee and entrepreneurial experience that represent the quality of the management team.

In regards to other controls variable, we find the presence of domestic VCs is negatively correlated with the syndication variable. The coefficient is statistically significant across all four specifications. The number of companies the VC has backed is positively correlated with the probability of making the investment: it is intuitively right as the more active VCs would have a higher probability to make new investments. The total experience measured by the number of rounds the VC has invested is however negatively related to the probability of deal formation: i.e. domestic VCs normally do not involve in deals that last for multiple rounds (compare with foreign VCs), especially when other variables are controlled. Lastly, consistent with the univariate test, the Growthstage variable is positively correlated with the presence of domestic VCs. In all, these findings are in line with the general pattern of domestic VCs: they are less experienced compared with foreign VCs so they may not be able to identify good investment candidates, and they are not risk tolerant and prefer to invest in the growth stage and less rounds to avoid investment loss.

5.2 Selection Biases and Alternative Approaches

As discussed above, there are two threats to our identification in Section 5.1: provincial-level omitted variable biases and selection effects. In regards to the selection issues, the concern is that the OLS result in Section 5.1 is merely driven by the possibility that better entrepreneurs are likely to match up with more experienced VCs. Rather than VC actively select to invest in start-ups with good potential, it could also be the that good entrepreneurs choose more experienced VCs as their investors. Following the literature, in this section, we provide three approaches to address the potential selection biases in the negative correlation between domestic VC and start-ups' background that we found in Section 5.1.

The first approach is an instrumental variable approach. The main idea is to find a valid instru-

ment that is independent of the outcome equation but should be related with quality measures of entrepreneurs. We choose the local availability of more experienced VCs - foreign VCs, as the instrumental variable. Unobservable characteristics might endogenously affect the company's actual choice of investors but the local supply of foreign VCs is exogenous. We measure the local availability of foreign VCs as follows: it is a fraction where the denominator is the total number of deals made in the province and the numerator is the number of deals made by foreign VCs. We estimate an IV Probit regression with the same specification as in Equation (1) while the returnee variable is now instrumented by the newly constructed IV. We present the IV regression result in Panel A. First we can see, the instrumental variable, foreign VC in the selection equation is positive with a high p-value. One the one hand, it demonstrates the validity of the local availability of foreign VCs as an instrument variable; on the other hand, it also confirms the matching pattern we find in previous section: more experience VCs match up with better company. After controlling for potential endogeneity, the sign and significance of main independent variables such as the Returnee and Entrepreneur stay the same before. In fact, the magnitude of the Returnee variable becomes larger once being instrumented by the local availability of foreign VCs.

The second approach is the Ackerberg and Botticini approach and we refer to their paper Ackerberg and Botticini (2002). The idea of this approach is to assume the distribution of local market characteristics is exogenous to the choice of a company. We thus instrument human capital variables and all VC characteristics such as the VC age, number of companies, total and industry experience by the interactions between province and stage, province and industry. In our sample, we have 14 provinces, 3 stages and 9 industries, in total the number of interaction terms is: $14 * 9 - 1 + 14 * 3 - 1 = 166$. We report the Ackerberg and Botticini approach in Panel B. Note that we estimate a linear regression model rather than a Probit model given its difficulty to achieve numeric convergence. We can see that after introducing a larger set of instruments, the significance and sign of the variable Returnee do not change.

The third approach is to follow Sørensen (2007) and the Heckman (1979) sample selection model. We construct potential deals in the following steps: for each year each investor can choose to invest on any other companies that receive funding in that year. By year, we construct all the possible matches. It is true that VC can make investment at anytime to any company theoretically but that is under the assumption that the VC and company are already in operation before our sample's starting year, 1994, which is highly unlikely to hold, especially for the startups. Therefore, we choose to build up the

potential pairs only within the year. Moreover, in the years when VCs do not make actual investments, we can not observe their experience variables. This approach results in 208,036 potential deals in total. In selection equation, we also include the fixed effects by controlling for industry and also interactions between year and province. We report the S-H approach in Panel C. Once again we find that under the general structure of S-H model, results are qualitatively similar to those in Table 7.

6 A Policy of Attracting Overseas Chinese Back

Another thread to a causal interpretation of the OLS relationship is that the decisions of individuals to becomes entrepreneurs may be related to local economic conditions that directly affect investment decisions of VCs. We argue that such effects are less likely to jeopardize our findings for two reasons. First, we control for province and year fixed effects and it has little impact on the estimates. Second, any remaining omitted variables (e.g., local entrepreneurial spirit) are likely to bias the estimated effect of traits of startup founders on VC investments upward. For instance, for regions that have long tradition of entrepreneurship and individuals have higher tendency to become entrepreneurs, VCs should be more likely to match up with good entrepreneurs because this increases the supply of high-quality startup founders. This would work in the opposite way to our main finding in previous section that domestic VCs are less likely to invest in the high-quality founders. These arguments suggest that the results in Table 7 are unlikely to be driven by omitted variable, but they are not definitive. In this section, we employ a quasi natural experiment that generates variation in supply of high-quality entrepreneurs to identify the causal inference.

6.1 Institutional Background

Many developing countries have been suffering from brain drains as the results of their brightest people going abroad to study and stay in the developed world. China is a typical example due to the large number of high-talented emigrants overseas. Since the early 1990s, it has become increasingly popular for Chinese students to study abroad. However, in recent decades, high-talented emigrants with foreign experience started to return to China to set up their own business. [1] The immigration of those highly-educated overseas Chinese might have been a result of a new policy to attract such highly-talented

[1] For example, Yanhong Li, who is the founder of Baidu.com, studied at the University of Buffalo, and worked as a staff engineer for Infoseek, a pioneer internet search engine company before starting baidu.com.

emigrants. As pointed out by Zweig (2006), local Chinese governments started adopting polices to recruit returnees and foster entrepreneurial activities. In order to attract returnee emigrants, local governments started to provide tax and other benefits to encourage returnee to start new companies, such as office-rent exemptions. Many local governments established "enterprise incubators" for returnees, called "Centers for overseas scholars to establish businesses" to provide various services. The policy also contained other personal benefits for returnee, such as long-term residence permits, welfare benefits, subsidized housing, tax-free imports of automobiles and computers, assistance in finding a job for the spouse and children for schooling, as well as some local grants and awards.

As documented in Giannetti et.al (2015), the policy to attract highly-talented emigrants was introduced at provincial level at different time, starting in late 1990s. The staggered nature of the policy provides us an exogenous shock on the supply of high qualified entrepreneurs at provincial level in China. Also, the introduction of the policy is not necessarily related to the regional economic development level. For example, the advanced coastal provinces such as Shanghai, Jiangsu employed the policies in 2004 and 2005, while some lagged-behind central provinces such as Anhui and Henan introduced the policy in the early 1990s. What is more, the local government adopted those policies may mainly due to the competition among regional policy makers. Provincial leaders designed the policies with the motive of catering the central leaders irrespective of the real needs for the local development. They might also have copied the behavior of neighbor provincial leaders and introduced similar policies regardless whether these polices are suitable for local development or not. Figure 2 and Figure 3 demonstrate the graphical analysis of the timing of the policy and economic development measured by GDP per capital, GDP growth, FDI inflows and FDI growth across provinces. We cannot find any evidence that the timing of the introduction of the policy is correlated with the local economic development. So we do not expect the adoption of policies is related to the investment opportunities of VCs or driven by the need of VCs. What is more, the main objective is to attract those highly-educated Chinese overseas to improve the academic quality and spur entrepreneurship in China, not designed explicitly to benefit VCs. To our knowledge, there is no evidence showing that VCs would be able to influence the local politicians or lobby for the adoption of the policies. As a result, we argue that the provincial level policy to attract highly-talented emigrants provides us an exogenous shock on the local supply of talented entrepreneurs, which could benefit us to test the effect of attracting highly-talented emigrant entrepreneurs on the local VC activities and entrepreneurship, particularly the matching patterns of

domestic VC.

6.2 Graphical Motivation

In this section, we provide evidence shows that the policy indeed has significant impact on the entry of startups in high-tech industries and VC investments. More specifically, after the policy takes effect, first the creation of new firms in the high-tech industries increases; and second, the foreign VC investments also rise up.

Table 9 Panel A provides the first evidence of the policy effect on the entry of new firms in the high-tech industries. We analyze the policy in a simple difference-in-difference framework similar to Beck et al. (2010)[add]. Specifically, we have the following regression equation:

$$Y_n = \alpha + \beta Post + \beta_X X_c + \lambda_t + \nu_p \tag{2}$$

We aggregate the number of newly registered firms in high-tech industries to the provincial level and take its logarithm as the dependent variable Y_n. The new registration dataset is collected from Qichacha (Qichacha.com) which is the largest database on Chinese business registration information: for every enterprise in China, it should register through the local Industry and Commerce Administration. We therefore have the information regarding the enterprise's name, registration date, equity type, legal person, registration capitalization, business scope and location. From the first column (1), it is clear that the dummy variable *Post* which equals one after the policy takes effect in the province, shows up positively and statistically significant. It demonstrates a positive effect of the policy on the new registration of high-tech firms. To be more consistent with our VC dataset, in column (2), we change the dependent variable to the natural logarithm of the number of newly registered high-tech firms each province in the following industries: i.e. "Internet & Related Service", "Communications, Software and & Information Technology", "Research and Development", "Computer, Communications and other Electronic Equipment Manufacture". As those are industries with a relatively higher concentration of returnee entrepreneurs, it is expected that the effect is more profound and significant with a larger coefficient, after the policy is in place. To mitigate the concern of time-varying economic condition across years and unobservable heterogeneity in the provinces, we control for the fixed effects of year and province in both columns. Moreover, we also control the GDP per capital and labor shares in service

industry of each province, both of the coefficients are positively statistically significant.

To further demonstrate the dynamic effect of the policy, we include a series of dummy variables in the baseline regression Equation (2) to identify the year-by-year effects of the policy to attract returnees on the new entry firms in the returnee-intensive high-tech industries. We have the following specification:

$$Y_n = \alpha + \beta_1 D^{-10} + \beta_2 D^{-9} + ... + \beta_{25} D^{+10} + \beta_X X_c + \lambda_t + \nu_p \quad (3)$$

D^{-j} is a dummy variable which equals to one for province in the jth year before the policy; D^{+j} is a dummy variable which equals to one for province in the jth year after the policy. Figure 4 plots the coefficients of the policy dummies and the 95% confidence interval, which are adjusted for province-level clustering. Figure 4 demonstrates two key messages: the surge in the number of new creations in high-tech firms followed the passage of the policy, and it has a fairly quick impact on the increase of the new entry of high-tech startups. As one can see, the coefficients on the policy dummy variables are insignificantly different from zero for almost all years before the policy. Second, note that the number of new registered high-tech firms increases immediately after the implementation. And the impact of the policy is also long-lasting: it can be as far as more than 10 years after it takes place.

We move on to analyze the effect of the policy on the VC investments using the VC dataset. Similar to the Heckman selection approach in Section 5.2, we generate the dependent variable in the following way, first we use the sample of actual VC investment deals and construct the VC-startup investment dyads that could have formed. As this analysis is aggregate at provincial level, we are not limited our hypothetical sample to that the startups can only match up with VCs who make investment in a given year. Instead, a startup can receive investment from any VCs that exist in our dataset. That is why the dyad sample ends up around 800,000 potential deals. Then we generate the year-province aggregation of investments made by foreign VCs and use it as the dependent variable. With the same regression design as Equation (2), in Table 9 Panel B it shows that the number of foreign VCs increases significantly following the policy takes effect. All these evidence in Table 9 gives strong support that the policy has a significant and fast acting effect on both the number of new startups in high-tech industries and followed by positive surge in the VC investment. It lays out a solid grounding for our analysis of the investment behavior change for domestic VCs in the next section.

6.3 Regression Design and Empirical Results

In this section, we test our Hypothesis 2. To capture the policy effects on the VC matching, we estimate a difference-in-difference regression. We create a dummy that equals to one if the VC investment occurs after the policy event and zero otherwise. As shown in Equation (4), we interact the policy dummy with each of the five measures of human capital characteristics with the same specification as Equation (1). We are interested in the interaction terms between the policy dummy and the human capital measure. We hypothesize that domestic VCs might increase, decrease or stay unchanged their investments to high-quality entrepreneurs after the policy, one would expect either a positive, negative or insignificant coefficient of the interaction term between the two variables.

$$Y_d = \alpha + \omega_H H_c + \omega_P Policy_p + \omega_{inter} H_c \times Policy_p + \omega_E E_i + \omega_C C_d + \omega_X X_c + \eta_s + \lambda_t + \nu_p \quad (4)$$

We present the regression result in Table 10. First, we can see a majority of the interaction terms between human capital measures of entrepreneurs and the policy dummy is positive and statistically significant. It indicates that the "assortative matching" pattern has been mitigated after the implementation of the policy. The probability that domestic VCs matches up with better entrepreneurs, especially those with previous managerial and entrepreneurial experience, has increased. Second, there is weak support that the domestic VCs is less likely to invest in founders with previous political experience. Moreover, it is surprising to see the coefficients of returnee entrepreneurs are not significant across a variety of specifications. We further analyse the heterogeneous effects of the reversal pattern of returnee entrepreneurs based on the following triple interaction specification:

$$\begin{aligned} Y_d = {} & \alpha + \omega_1 Returnee_c + \omega_2 Policy_p + \omega_3 Dummy_p \\ & + \omega_{12} Returnee_c \times Policy_p + \omega_{13} Returnee_c \times Dummy_p + \omega_{23} Policy_p \times Dummy_p \\ & + \omega_{123} Returnee_c \times Policy_p \times Dummy_p + \omega_E E_i + \omega_C C_d + \omega_X X_c + \eta_s + \lambda_t + \nu_p \end{aligned} \quad (5)$$

First, we analyse whether the reverse in the assortative matching pattern occurs in sectors with more intensive investment in returnees. We create a dummy that equals one if investment is made to Internet & Computers or Communications & Electronics industries. From Table 3, those two industries account for the largest number of investments made to returnee entrepreneurs. As the Table 12 shows, the triple interaction dummy ω_{123} is positive and statistically significant in column (2), (3) and (4).

It indicates the domestic VCs are more likely to match up with returnee entrepreneurs in industries more returnee-intensive. In other words, after the implementation of the policy, the mitigation effect towards the assortative matching between returnee entrepreneurs and domestic VCs is more profound in industries that attract more VC investments on returnees.

Second, we hypothesize that the mitigation effect would be more significant in provinces that are lagged in their economy or attractiveness to VC investments and thus the policy might have a larger effect. We therefore generate a dummy that equals one if the investments are made in provinces other than Beijing. We run the above specification and focus on the triple interaction term. Results in Table 12 confirm our hypothesis: the mitigation effect occurs in provinces other than Beijing. Domestic VCs have a higher chance to match up with returnee start-up founders after the policy takes effect in other provinces.

7 Exit and Entrepreneurs' Human Capital

Prior work documents experienced or active VCs invest in late-stage and biotechnology startups and those matchups associated with higher IPO rates (Sørensen (2007) and Bottazai et al. (2007)). They propose the quality of management team would also play an important role in both the sorting and the exit outcome. In this paper, we have direct measures of entrepreneurs' quality. Therefore, after documenting the effect of human capital on the deal formation, we move on to ask to what extent the human capital matters for the performance outcomes.

Following previous studies (Gompers et al. (2005); Sørensen (2007); Bottazzi, Da Rin and Hellmann (2008)), we measure performance of start-ups by a successful exit such as acquisitions, Initial Public Offerings (IPOs) or trade sales. We only consider investments made in and before 2007 because we might not observe the exit outcomes for the investments made after that. We assume that an investment will need at least five years to exit after the initial investment. So for investment made in and before 2007, we assume they failed if we do not observe any exit outcomes. For the investment made after 2007, we are not sure whether those deals failed or they are still on-going investment if we do not observe the exit outcomes. This results in a smaller sample with 921 observations. In regards to the identification of matchings on exits, a regression of exits against the presence of a domestic VC shows

up an insignificant correlation which is consistent with prior findings[1]. We report this result in Panel A of Table 13. All measures of domestic VCs are insignificant. As illustrated in Sørensen (2007), however, this OLS regression with missing company characteristics has endogeneity because unobserved traits of start-ups in the error terms might be positively related with the matching process. We therefore address this issue in two ways. First, we estimate the model within an instrumental variable framework. The key identification assumption is that founders' human capital characteristics are more likely to affect the deal formation at the stage of matching than the company's outcome directly at the later stage . We employ the human capital variables as the first stage instrument. The two-stage IV Probit model is estimated by the following two equations:

$$Y_d = \alpha_Y + \beta_H H_c + \beta_E E_i + \beta_C C_d + \beta_X X_c + \eta_s + \lambda_t + \nu_p \tag{6}$$

$$E_d = \alpha_E + \gamma_Y Y_d + \gamma_E E_i + \gamma_C C_d + \gamma_X X_c + \eta_s + \lambda_t + \nu_p \tag{7}$$

where variables are defined in Section 5 and *Ed* measure the exit performance for the investment *d*. Panel B of Table 13 estimates the IV Probit model. We find that the domestic VC investments drop in the likelihood of successful exits significantly once the sorting based on human capital traits is considered in the matching stage, i.e. they are less likely to match up with better quality entrepreneurs. The coefficients of the presence of domestic VCs are all negative and statistically significant. It confirms the importance of controlling for engodeneity in the matching process.

Second, we examine the interact effects between the human capital and the domestic VCs variables on exit performances. More specifically, we estimate the following specification:

$$E_d = \alpha_E + \theta_Y Y_d + \theta_H H_c + \theta_{inter} Y_d \times H_c + \theta_E E_i + \theta_C C_d + \theta_X X_c + \eta_s + \lambda_t + \nu_p \tag{8}$$

In each panel of Table 14, we report the interaction terms between a measure of domestic VC and the five measures of entrepreneurs' human capital. Our primary variable of interest is the interaction term, if it shows up positively then it indicates that exit outcome increases in its likelihood when domestic VCs match up with high quality entrepreneurs. The results appear to confirm the positive effect of our Hypothesis 3: except one variable, the political experience, all other four human capital measures are positive for at least once when they interact with the domestic VCs variable. Results from Table 13

[1] Jenner and Suchard (2013a), Table 7, Column 4.

and 14 are consistent and reveal the importance of human capital of entrepreneurs in determining the exit outcomes.

8 Conclusion

In this paper, we discover that human capital characteristics of founders are among the first-order important factors that determine the matching between VCs and entrepreneurs. More specifically, Chinese Domestic VCs are less likely to match up with higher quality entrepreneurs. Those characteristics are also positively related to start-ups' exits. Moreover, we document a reverse in this assortative matching pattern using a policy aims to attract high-quality Chinese overseas immigrants to return and establish business at provincial level in China. And this effect is more profound for returnee entrepreneurs in more human-capital-intensive sectors as well as provinces with lower attractiveness to VC investment. Policy implications from the results are as follows: local government should place talent-related policy in a relatively more important position as it deals with not only the labour input but also, according to our paper, attracts the capital investment. Both inputs essentially contribute to high-quality economic growth as those attracted talents, with sufficient funding supports, would conduct innovative entrepreneurial activities in high-tech sectors which bring about economic growth. Moreover, this implication is particularly relevant for regions are lagged in institutions or economies.

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Figure 1

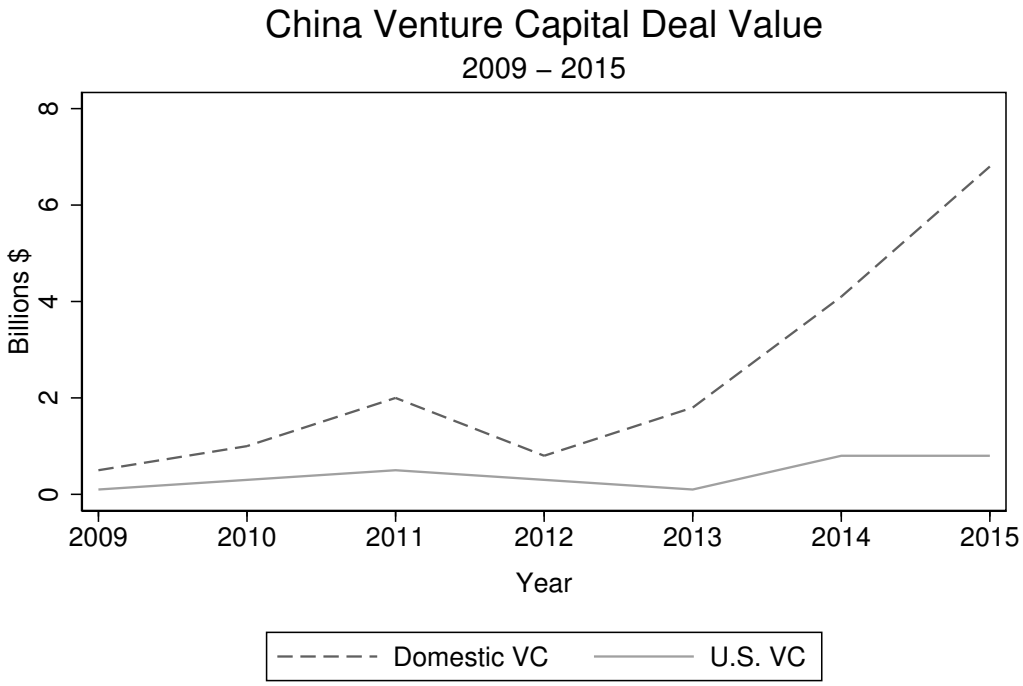

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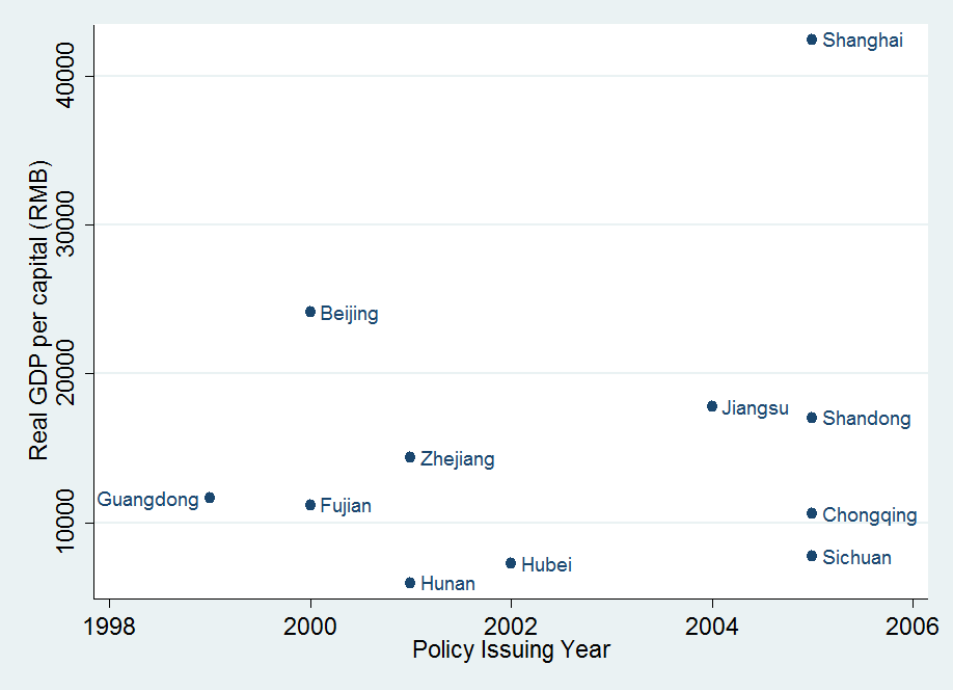
Figure 2: Timing of policy issuing and pre-existing GDP

Figure(a) shows a scatter plot of the real GDP per capital (RMB) prior to the policy of attract returnee entrepreneurs and the policy issuing year. Figure(b) shows a scatter plot of the real GDP growth prior to the policy of attract returnee entrepreneurs and the policy issuing year.

(a) GDP per capital (Real)



(b) GDP growth

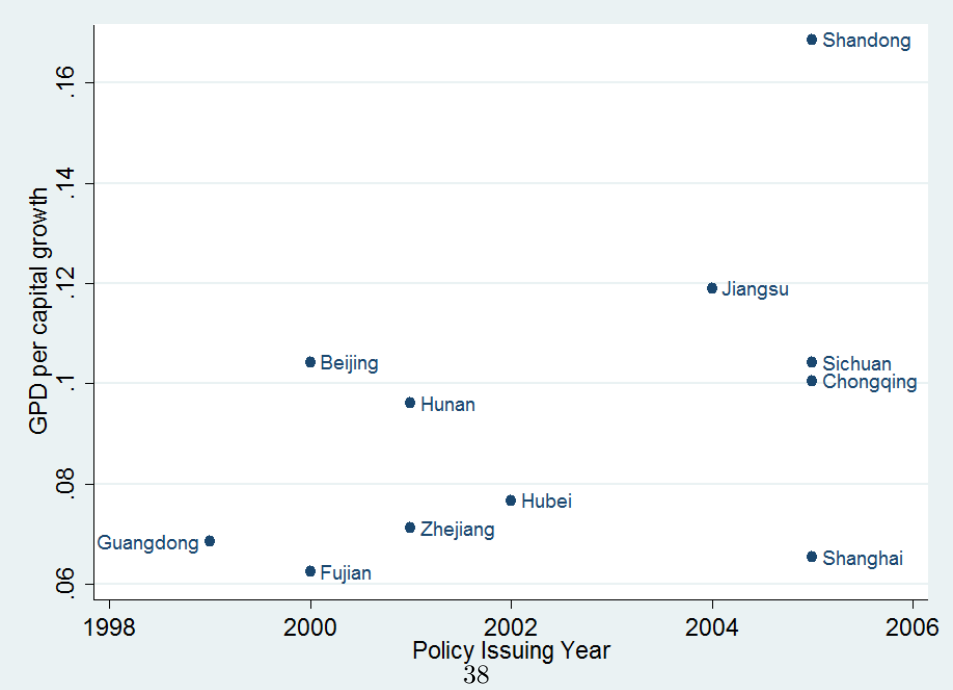


Figure 3: Timing of policy issuing and pre-existing FDI investments

Figure(a) shows a scatter plot of the FDI inflows prior to the policy of attract returnee entrepreneurs and the policy issuing year. Figure(b) shows a scatter plot of the FDI growth prior to the policy of attract returnee entrepreneurs and the policy issuing year.

(a) FDI inflows

(b) FDI growth

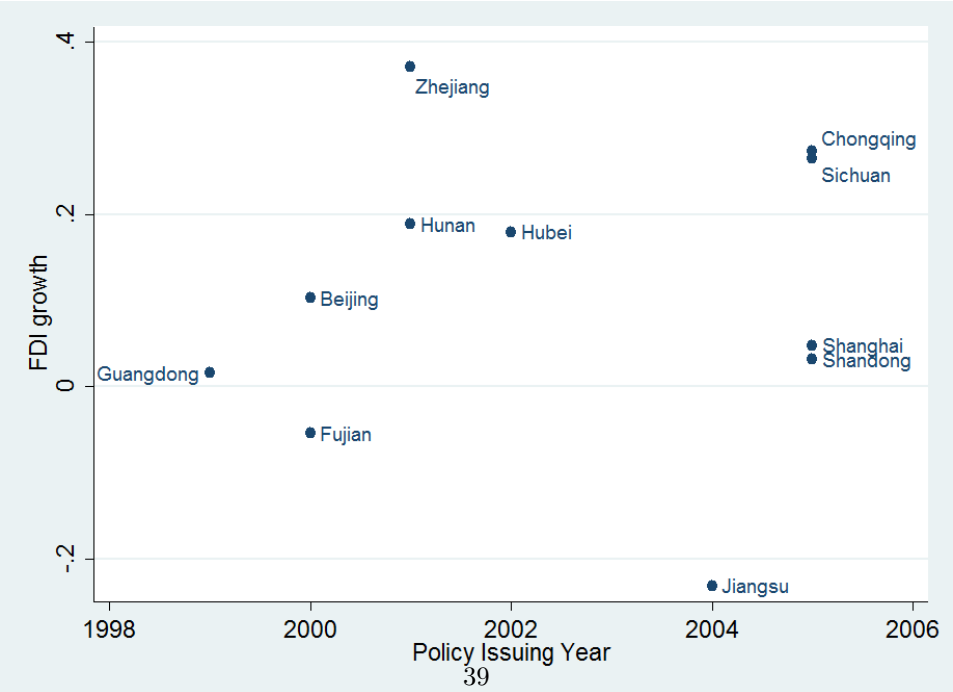


Figure 4: Multiple-period DiD of the new entry of high-tech firms

Figure 4 reports estimated coefficients from Equation (3). There is a 25-year window, spanning from 10 years before the policy until 15 years after the policy. The dash lines represent 95% confidence intervals, adjusting for province-level clustering. In the dynamic regression equation, we control for region and year fixed effects as well as the GDP per capital and labor percentage in the service sector.

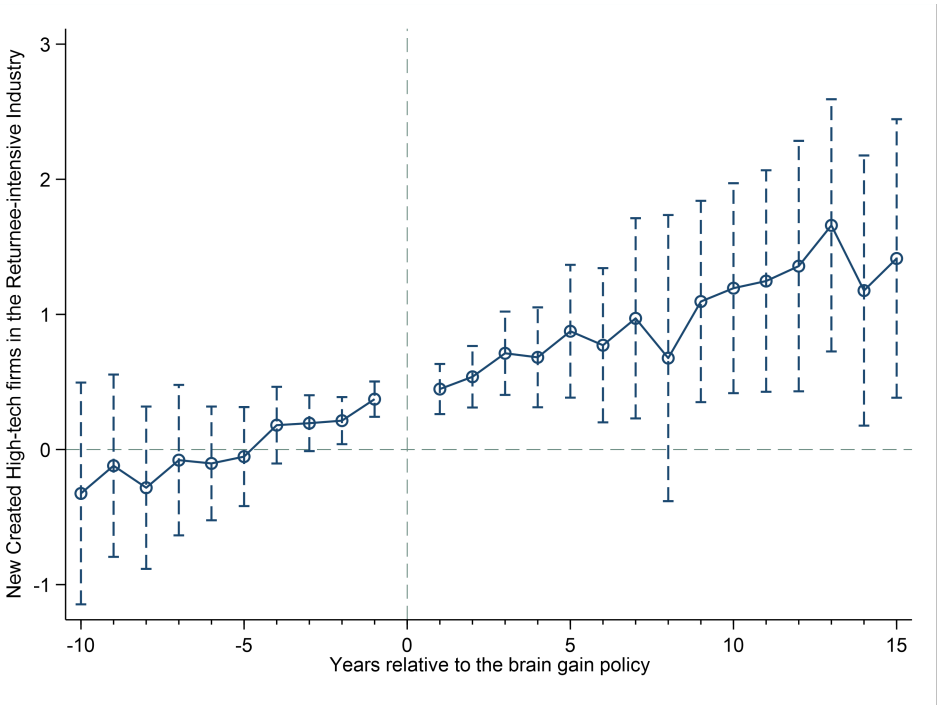


Table 1: Definition and data source of variables

Variable	**Definition and Data Source**
Returnee	A dummy variable that equals one if the entrepreneur has foreign education or work experience and zero otherwise. Source: Manual collection.
Domestic[1]	A dummy variable that equals one if the investment is made by a domestic VC investor. Source: Zero2IPO.
I(At least one DVC)	A dummy variable that equals one if the investment is made by at least one domestic VC investor at the same investment date. Source: Zero2IPO.
Prop(DVC)	The proportion of domestic VCs among all the VCs investing in the portfolio firm at the same investment date. Source: Zero2IPO.
I(only DVC)	A dummy variable that equals one if the investment is only made by domestic VC investor(s) at the same investment date. Source: Zero2IPO.
VC-Age[2]	Number of years since the first-ever investment of the venture capital firm. Source: Zero2IPO.
No. of backed-companies	Number of portfolio companies the VC has backed. Source: Zero2IPO.
VC industry experience	Number of previous investments the VC has made in the same industry, following Gompers et al. (2008). Source: Zero2IPO.
VC total experience	Number of previous investment rounds the VC has made, following Sørensen (2007). Source: Zero2IPO.
Syndication	A dummy variable that equals one if the investment is not made by a single investor. Source: Zero2IPO.

Continued on next page

[1] Domestic is measured at single investment deal level, I(At least one DVC), I(only DVC) and Prop(DVC) are measured at the same investment date (syndication).

[2] VC-Age, No. of backed-companies, Industry Experience and Total Experience are measured at venture firm level.

Continued from previous page

Variable	Definition and Data Source
I(FVC & DVC)	A dummy variable that equals one if there are at least one foreign VC and one domestic VC investments in the company at the same investment date. Source: Zero2IPO.
Num Rounds[1]	The total number of investment rounds in which the company received funding. Source: Zero2IPO.
Total Num Investors	The total number of unique GPs that invested in the company. Source: Zero2IPO.
Max Fund Exits	The maximum number of exits achieved by one of the funds that invests in the company. This variable refers to the Chinese market and source is Zero2IPO.
Max Num Fund Provinces	The maximum number of provinces in which a fund (that invests in the company) has invested. Source: Zero2IPO.
Max Average Fund Investment Size	The average investment size is the average size of investments that the fund makes in any company. We compute this for all funds that invest in the company and take the maximum value. Source: Zero2IPO.
Exit	A dummy variable that equals one if the portfolio firm which the VC invested has been exited via an IPO or acquisition or trade sale by 2013. Source: Zero2IPO.
I(IPO Foreign)	A dummy variable that equals one if the company which the VC invested IPO in a foreign country, HK excluded. Source: Zero2IPO.
I(IPO)	A dummy variable that equals one if the company which the VC invested exit via IPO. Source: Zero2IPO.

Continued on next page

[1] Num Rounds, Total Num Investors, Max Fund Exits, Max Num Fund Provinces and Max Average Fund Investment Size are measured at portfolio company level.

Continued from previous page

Variable	Definition and Data Source
I(MA)	A dummy variable that equals one if the company which the VC invested exit via mergers & acquisitions. Source: Zero2IPO.
I(TradeSale)	A dummy variable that equals one if the company which the VC invested exit via trade sales. Source: Zero2IPO.
EarlyStage	A dummy variable that equals one if the VC investment in the portfolio firm is at the early stage and zero if the VC investment in the portfolio firm is at the growth stage or the later stage. Source: Zero2IPO.
GrowthStage	A dummy variable that equals one if the VC investment in the portfolio firm is at the growth stage and zero if the VC investment in the portfolio firm is at the early stage or the later stage. Source: Zero2IPO.
LateStage	A dummy variable that equals one if the VC investment in the portfolio firm is at the later stage and zero if the VC investment in the portfolio firm is at the early stage or the growth stage. Source: Zero2IPO.
Foreign Education	A dummy equal to one if the entrepreneur has foreign education. Source: Manual collection.
Foreign Work	A dummy equal to one if the entrepreneur has foreign work experience. Source: Manual collection.
Manager	A dummy equal to one if the entrepreneur has previous work experience as a manager (but not CEO) before starting the business. Source: Manual collection.
Entrepreneur	A dummy equal to one if the entrepreneur has previous entrepreneurial experience before starting the business. Source: Manual collection.

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Variable	**Definition and Data Source**
CEO	A dummy equal to one if the entrepreneur has previous work experience as a CEO before starting the business. Source: Manual collection.
Political	A dummy equal to one if the entrepreneur has political connection. An entrepreneur is defined as politically connected if he or she is a current or former member of government bureau. Source: Manual collection
VC failure tolerance	Weighted average of a VC firm's investment duration in its eventually failed projects up to a given year. Source: Zero2IPO.
ΔGDP	The growth rate of GDP in a province in the year. Source: CSMAR and China Statistical Year Book.
ΔFDI	Growth rate of foreign direct investment in a province. Source: China Statistical Year Book (Province)
GDP_PC	GDP per capital in a province in the year. Source: CSMAR and China Statistical Year Book.
Service	Percentage of people work in the service sector. Source: China Statistical Year Book (Province).

Table 2: Summary statistics

	Mean	S.D.	Min	Max	Observations
Returnee	0.367	0.482	0	1	2417
Domestic	0.444	0.497	0	1	2417
I(At least one DVC)	0.528	0.499	0	1	2417
Prop(DVC)	0.445	0.466	0	1	2417
I(only DVC)	0.386	0.487	0	1	2417
VC-Age	5.390	4.258	0	17.84	2417
No. of backed-companies	28.18	41.97	0	316	2417
VC Industry Experience	9.670	19.27	0	177	2417
VC Total Experience	36.26	57.47	0	405	2417
Syndication	0.643	0.479	0	1	2417
I(FVC & DVC)	0.157	0.364	0	1	2417
Num Rounds	2.330	1.349	1	7	2417
Total Num Investors	3.192	2.206	1	13	2417
Max Fund Exits	20.96	20.26	0	73	2417
Max Num Fund Regions	16.12	7.251	1	31	2417
Total Invested Amount	32.32	108.2	0.100	2367.7	2253
EarlyStage	0.298	0.458	0	1	2417
Growthstage	0.609	0.488	0	1	2417
Latestage	0.0927	0.290	0	1	2417
Exit	0.362	0.481	0	1	2417
I(IPO Foreign)	0.431	0.496	0	1	648
I(IPO)	0.269	0.444	0	1	2417
I(MA)	0.0451	0.208	0	1	2417
I(TradeSale)	0.0397	0.195	0	1	2417
Foreign Study	0.329	0.470	0	1	2272
Foreign Work	0.322	0.467	0	1	2244
Manager	0.229	0.420	0	1	2417
Entrepreneur	0.136	0.343	0	1	2417
CEO	0.0943	0.292	0	1	2417
Political	0.0257	0.158	0	1	2417
VC failure tolerance	0.467	0.733	0	8	1944

Table 3: Industrial distribution of VC deals and portfolio firms

We regroup the industry into nine categories: Communications & Electronics, Business & Industrial, Consumer, Biotechnology & Healthcare, Business Services, Finance, Energy and All Others.

	Deals by VC Type			Portfolio firms by founder type		
	DVC	FVC	All	Local	Returnee	All
Internet & Computers	207	643	850	514	336	850
Communications & Electronics	225	237	462	246	216	462
Business & Industrial	191	82	273	202	71	273
Consumer	29	20	49	39	10	49
Biotechnology & Healthcare	264	145	409	248	161	409
Business Services	34	50	84	58	26	84
Finance	16	22	38	26	12	38
Energy	40	5	45	37	8	45
All Others	107	93	200	154	46	200
Total	1,113	1,297	2,410	1,524	886	2,410

Table 4: Geographical distribution of VC deals and portfolio firms

	Deals by VC Type			Portfolio firms by founder type		
	DVC	FVC	All	Local	Returnee	All
Beijing	201	611	812	464	348	812
Chongqing	33	11	44	33	11	44
Fujian	41	17	58	48	10	58
Guangdong	291	136	427	324	103	427
Guangxi	10	0	10	10	0	10
Guizhou	1	3	4	4	0	4
Hubei	37	14	51	32	19	51
Hunan	43	3	46	41	5	46
Jiangsu	171	63	234	153	81	234
Shandong	36	13	49	42	7	49
Shanghai	127	357	484	235	249	484
Shanxi	2	0	2	2	0	2
Sichuan	35	14	49	42	7	49
Zhejiang	89	58	147	100	47	147
Total	1,117	1,300	2,417	1,530	887	2,417

Table 5: Summary statistics by VC type

	DVC	FVC	N_{DVC}	N_{FVC}	p-value
Returnee	0.24	0.47	1117	1300	< 0.01
VC-Age	4.80	5.90	1117	1300	< 0.01
No. of backed-companies	22.2	33.3	1117	1300	< 0.01
VC Industry Experience	4.79	13.9	1117	1300	< 0.01
VC Total Experience	25.7	45.3	1117	1300	< 0.01
Syndication	0.57	0.71	1117	1300	< 0.01
Num Rounds	1.88	2.72	1117	1300	< 0.01
Total Num Investors	2.57	3.72	1117	1300	< 0.01
Max Fund Exits	20.0	21.8	1117	1300	0.030
Max Num Fund Regions	16.0	16.3	1117	1300	0.34
Total Invested Amount	22.8	39.4	955	1298	< 0.01
EarlyStage	0.25	0.34	1117	1300	< 0.01
Growthstage	0.66	0.57	1117	1300	< 0.01
Latestage	0.086	0.098	1117	1300	0.29
Exit	0.37	0.35	1117	1300	0.41
I(IPO Foreign)	0.095	0.75	315	333	< 0.01
I(IPO)	0.28	0.26	1117	1300	0.26
I(MA)	0.029	0.059	1117	1300	< 0.01
I(TradeSale)	0.056	0.025	1117	1300	< 0.01
Foreign Study	0.21	0.44	1085	1187	< 0.01
Foreign Work	0.20	0.44	1081	1163	< 0.01
CEO	0.15	0.30	1117	1300	< 0.01
Manager	0.079	0.18	1117	1300	< 0.01
Entrepreneur	0.039	0.14	1117	1300	< 0.01
Political	0.035	0.018	1117	1300	< 0.01
VC failure tolerance	0.24	0.62	773	1171	< 0.01

Table 6: Summary statistics by founder type

	Local	Returnee	N_{Local}	$N_{Returnee}$	p-value
Domestic	0.54	0.27	1530	887	< 0.01
I(At least one DVC)	0.61	0.39	1530	887	< 0.01
Prop(DVC)	0.54	0.27	1530	887	< 0.01
I(only DVC)	0.49	0.21	1530	887	< 0.01
VC-Age	5.45	5.28	1530	887	0.33
No. of backed-companies	28.7	27.2	1530	887	0.40
VC Industry Experience	9.60	9.79	1530	887	0.81
VC Total Experience	36.6	35.6	1530	887	0.66
Syndication	0.61	0.71	1530	887	< 0.01
Num Rounds	2.15	2.64	1530	887	< 0.01
Total Num Investors	2.76	3.93	1530	887	< 0.01
Max Fund Exits	20.0	22.6	1530	887	< 0.01
Max Num Fund Regions	16.1	16.2	1530	887	0.71
Total Invested Amount	30.5	35.4	1408	845	0.30
EarlyStage	0.30	0.29	1530	887	0.74
Growthstage	0.61	0.61	1530	887	0.94
Latestage	0.091	0.096	1530	887	0.68
Exit	0.34	0.40	1530	887	< 0.01
I(IPO Foreign)	0.30	0.61	378	270	< 0.01
I(IPO)	0.25	0.31	1530	887	< 0.014
I(MA)	0.044	0.046	1530	887	0.84
I(TradeSale)	0.042	0.036	1530	887	0.49
CEO	0.20	0.27	1530	887	< 0.01
Manager	0.10	0.20	1530	887	< 0.01
Entrepreneur	0.088	0.10	1530	887	0.18
Political	0.029	0.019	1530	887	0.12
VC failure tolerance	0.41	0.57	1204	740	< 0.01

Table 7: VC and Entrepreneur Matching
Note: This table presents regression estimates of Equation (1). The dependent variables are Domestic, I(At least one DVC), I(only DVC) and Prop(DVC). Variables are defined in Table 1. Columns (1) - (3) report the results using Probit models, Column (4) report the results using Tobit models with a lower bound of 0 and an upper bound of 1. In all regressions, we include year, industry and province dummy variables. Standard errors are clustered by venture firm. *,**, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	Domestic	I(At least one DVC)	I(only DVC)	Prop(DVC)
	(1)	(2)	(3)	(4)
Returnee	-0.594***	-0.706***	-0.720***	-1.008***
	(-8.10)	(-8.59)	(-9.51)	(-6.68)
CEO	-0.119	-0.119	-0.193	-0.239
	(-0.91)	(-0.79)	(-1.26)	(-0.99)
Manager	-0.181	-0.215	-0.052	-0.183
	(-1.27)	(-1.32)	(-0.32)	(-0.71)
Entrepreneur	-0.571***	-0.462***	-0.869***	-0.671***
	(-3.58)	(-3.39)	(-5.56)	(-2.99)
Political	0.296	0.261	0.114	0.282
	(1.38)	(1.14)	(0.55)	(0.79)
Syndication	-0.395***	-0.368***	-0.762***	-0.776***
	(-3.63)	(-3.37)	(-6.43)	(-3.92)
I(FVC & DVC)	0.158	2.134***		0.835***
	(0.72)	(10.17)		(3.03)
VC-Age	-0.020	-0.032	-0.023	-0.050
	(-0.68)	(-1.31)	(-1.01)	(-1.24)
No. of Company	0.118***	0.067***	0.096***	0.092**
	(4.05)	(2.59)	(3.69)	(2.56)
VC Total Experience	-0.096***	-0.053***	-0.080***	-0.075***
	(-4.14)	(-2.67)	(-3.68)	(-2.58)
VC Industry Experience	-0.015	-0.002	-0.022**	-0.003
	(-1.18)	(-0.57)	(-2.37)	(-0.50)
EarlyStage	-0.181	-0.203	-0.159	-0.267
	(-1.37)	(-1.57)	(-1.16)	(-1.29)
Growthstage	0.126	0.223**	0.151	0.342**
	(1.24)	(2.13)	(1.41)	(2.08)
Industry FE	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	2390	2390	2390	2410
Pseudo R^2	0.361	0.391	0.413	0.246
χ^2	448.335	715.048	704.105	
Model p-value	0.000	0.000	0.000	

Table 8: Selection.
Note: This table presents regression estimates of Equation (1). The dependent variables are Domestic, I(At least one DVC), I(only DVC) and Prop(DVC). Variables are defined in Table 1. Columns (1) - (3) report the results using Probit models, Column (4) report the results using Tobit models with a lower bound of 0 and an upper bound of 1. In all regressions, we include year, industry and province dummy variables. In Panels A, B and C, we present results from models based on Section 5.2: an IV approach, the Ackerberg-Botticini (A-B) model, and the Sørensen-Heckman (S-H) model. Standard errors are clustered by venture firm. *,**, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	Domestic	I(At least one DVC)	I(only DVC)	Prop(DVC)
Panel A: IV Regressions				
Returnee	-2.247***	-2.301***	-2.304***	-9.755***
	(-58.08)	(-60.87)	(-69.17)	(-6.05)
CEO	-0.199*	-0.206*	-0.226*	-0.880
	(-1.73)	(-1.75)	(-1.92)	(-1.63)
Manager	0.248**	0.251**	0.308***	1.200**
	(2.13)	(2.24)	(2.75)	(2.18)
Entrepreneur	-0.289**	-0.233*	-0.380***	-0.959*
	(-2.05)	(-1.82)	(-2.82)	(-1.80)
Political	0.028	0.011	-0.056	-0.118
	(0.16)	(0.06)	(-0.34)	(-0.15)
Syndication	-0.065	-0.045	-0.146*	-0.325
	(-0.99)	(-0.70)	(-1.86)	(-1.19)
I(FVC & DVC)	0.280***	1.076***		1.764***
	(2.71)	(8.95)		(3.45)
VC-Age	-0.007	-0.011	-0.007	-0.043
	(-0.56)	(-1.11)	(-0.70)	(-1.05)
No. of Company	0.043***	0.020*	0.030***	0.061*
	(3.30)	(1.88)	(2.81)	(1.77)
VC Total Experience	-0.034***	-0.015*	-0.025***	-0.048*
	(-3.36)	(-1.91)	(-2.79)	(-1.80)
VC Industry Experience	-0.009*	-0.004**	-0.012***	-0.016*
	(-1.77)	(-2.02)	(-3.34)	(-1.83)
EarlyStage	-0.205**	-0.209**	-0.205**	-0.767**
	(-2.33)	(-2.44)	(-2.42)	(-2.27)
Growthstage	0.013	0.050	0.015	0.224
	(0.18)	(0.62)	(0.19)	(0.65)
Identification in the selection equation				
Local foreign VC supply	0.406***	0.406***	0.419***	0.409***
	(8.43)	(8.43)	(8.75)	(8.50)
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
N	2402	2402	2402	2410
χ^2	4916.303	5924.144	6836.198	89.788
Model p-value	0.000	0.000	0.000	0.000
Panel B: Ackerberg–Botticini Approach				
Returnee	-0.263***	-0.269***	-0.282***	-0.274***

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	Domestic	I(At least one DVC)	I(only DVC)	Prop(DVC)
	(-2.85)	(-2.88)	(-3.23)	(-3.08)
CEO	-0.152	-0.231	-0.036	-0.139
	(-0.93)	(-1.38)	(-0.22)	(-0.88)
Manager	0.042	0.164	0.024	0.054
	(0.26)	(0.97)	(0.15)	(0.35)
Entrepreneur	-0.022	0.060	-0.190	-0.031
	(-0.14)	(0.36)	(-1.26)	(-0.20)
Political	-0.111	-0.115	-0.197	-0.119
	(-0.60)	(-0.63)	(-1.09)	(-0.67)
Syndication	-0.113***	-0.113***	-0.185***	-0.113***
	(-3.19)	(-3.04)	(-4.79)	(-3.15)
I(FVC & DVC)	0.040	0.558***		0.052
	(0.56)	(11.54)		(1.37)
VC-Age	-0.029*	-0.028*	-0.023	-0.030*
	(-1.70)	(-1.67)	(-1.37)	(-1.82)
No. of Company	0.011	0.008	0.007	0.008
	(1.47)	(1.20)	(1.01)	(1.26)
VC Total Experience	-0.008	-0.006	-0.005	-0.006
	(-1.45)	(-1.17)	(-1.07)	(-1.23)
VC Industry Experience	-0.010*	-0.012**	-0.012*	-0.011*
	(-1.81)	(-1.98)	(-1.86)	(-1.91)
EarlyStage	-0.042	-0.045	-0.008	-0.036
	(-0.87)	(-0.93)	(-0.19)	(-0.82)
Growthstage	0.045	0.058	0.068**	0.050
	(1.30)	(1.60)	(2.04)	(1.56)
Identification in the selection equation				
Province - Industry and Stage interactions	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	2410	2410	2410	2410
R^2	0.204	0.210	0.212	0.195
Model p-value	0.000	0.000	0.000	0.000
Panel C: Sørensen–Heckman Approach				
Returnee	-0.158***	-0.174***	-0.164***	-0.161***
	(-8.45)	(-9.69)	(-9.16)	(-9.41)
CEO	-0.032	-0.023	-0.043	-0.032
	(-0.95)	(-0.71)	(-1.32)	(-1.03)
Manager	-0.013	-0.035	0.027	-0.012
	(-0.35)	(-0.99)	(0.77)	(-0.36)
Entrepreneur	-0.126***	-0.117***	-0.120***	-0.117***
	(-3.44)	(-3.33)	(-3.42)	(-3.48)
Political	0.049	0.063	-0.020	0.041
	(0.89)	(1.19)	(-0.38)	(0.81)
Syndication	-0.107***	-0.100***	-0.188***	-0.107***

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	Domestic	I(At least one DVC)	I(only DVC)	Prop(DVC)
	(-5.61)	(-5.48)	(-10.87)	(-6.13)
I(FVC & DVC)	0.024	0.529***		0.036
	(0.94)	(21.33)		(1.53)
VC-Age	-0.008***	-0.009***	-0.010***	-0.009***
	(-3.13)	(-3.47)	(-3.87)	(-3.73)
No. of Company	0.015***	0.011***	0.011***	0.011***
	(10.67)	(8.62)	(8.01)	(8.96)
VC Total Experience	-0.011***	-0.009***	-0.008***	-0.008***
	(-10.22)	(-8.85)	(-7.78)	(-8.44)
VC Industry Experience	-0.000	0.000	0.000	-0.000
	(-0.07)	(0.09)	(0.23)	(-0.28)
EarlyStage	-0.046	-0.029	-0.019	-0.046
	(-1.31)	(-0.86)	(-0.57)	(-1.43)
Growthstage	0.040	0.061**	0.062**	0.044
	(1.33)	(2.12)	(2.15)	(1.62)
Identification in the selection equation				
Province-year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Potential deals	208,036	208,036	208,036	208,036
Model p-value	0.000	0.000	0.000	0.000

Table 9: Policy effects: province evidence

Note: Panel A reports OLS regression estimates from Equation (2). The dependent variable in column (1) is the natural logarithm of the number of newly registered high-tech firms each province from 1986-2007 (the policy is implemented in a stagged style in difference provinces from 1992 to 2005); the dependent variable in column (2) is the natural logarithm of the number of newly registered high-tech firms each province in the following industries: i.e. "Internet & Related Service", "Communications, Software and & Information Technology", "Research and Development", "Computer, Communications and other Electronic Equipment Manufacture"; Post is a dummy variable that equals to one in years after the policy takes effect in the province, zero otherwise; GDP_PC is the natural logarithm of GDP per capital; Service is the percentage of people work in the service sector; robust standard errors are clustered in the province level; year and province fixed effects are controlled in the regressions.

For Panel B, the dependent variable is the dyad sample of foreign VC investments; the sample period ranges from 1994 to 2007; to smooth the VC investment data, we interpolate the missing variables using the panel-year average, e.g. if there is no observation for province A in year X, we fill it by the average number of foreign VC investment in the current year. Therefore, caution must be drawn to the estimates that given there are more missing variables before the policy, interpolation might lead to downward bias on the policy effect; Post is a dummy variable that equals to one in years after the policy takes effect in the province, zero otherwise; GDP_PC is the province-level natural logarithm of GDP per capital; Service is the percentage of people work in the service sector; robust standard errors are clustered in the province level; year and province fixed effects are controlled in column (2) regression. *,**, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: Number of new entry firms

	Total Industry	Returnee-Intensive Industry
	(1)	(2)
Post	0.134*	0.166**
	(1.9)	(2.05)
GDP_PC	1.269***	1.778***
	(4.55)	(4.99)
Service	0.012***	0.020***
	(7.67)	(8.09)
Year FE	Yes	Yes
Province FE	Yes	Yes
N	646	646
R^2	0.906	0.844

Panel B: Number of foreign VC investment

	Foreign VC dyad	Foreign VC dyad
	(1)	(2)
Post	0.656***	0.740***
	(4.36)	(7.61)
GDP_PC		1.364**
		(2.24)
Service		0.081***
		(3.1)
Year FE	No	Yes
Province FE	Yes	Yes
N	196	192
R^2	0.274	0.708

Table 10: Policy effects: deal-level evidence

Note: This table presents regression estimates of Equation (4). In Panel A, B, C and D, the dependent variables are Domestic, I(At least one DVC), I(only DVC) and Prop(DVC). Variables are defined in Table 1. In each column, we present the policy dummy, each human capital variable and their interaction. In all regressions, we include year, industry and province dummy variables. In addition to the variables presented, we also include but not report other human capital characteristics, deal-level controls, VC experience measures, stage dummies. Standard errors are clustered by venture firm. *,**, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	Returnee	CEO	Manager	Entrepreneur	Political
	(1)	(2)	(3)	(4)	(5)
Panel A: Domestic					
Policy x Human Capital Measure	0.201	0.608*	0.809*	1.023**	-0.486
	(0.67)	(1.96)	(1.90)	(2.24)	(-1.09)
Human Capital Measure	-0.787***	-0.651**	-0.854**	-1.439***	0.743*
	(-2.69)	(-1.99)	(-2.48)	(-3.14)	(1.79)
Policy	-0.272	-0.385*	-0.392*	-0.329	-0.135
	(-1.11)	(-1.74)	(-1.81)	(-1.63)	(-0.69)
Observations	2390	2390	2390	2390	2390
Pseudo R2	0.361	0.363	0.364	0.364	0.361
Panel B: I(At least one DVC)					
Policy x Human Capital Measure	-0.083	0.264	0.390	1.325***	-0.405
	(-0.30)	(0.94)	(1.19)	(3.62)	(-1.00)
Human Capital Measure	-0.633**	-0.347	-0.548*	-1.563***	0.634
	(-2.33)	(-1.16)	(-1.92)	(-4.43)	(1.62)
Policy	-0.194	-0.348	-0.367*	-0.542***	-0.233
	(-0.81)	(-1.60)	(-1.71)	(-2.58)	(-1.24)
Observations	2390	2390	2390	2390	2390
Pseudo R2	0.392	0.392	0.392	0.396	0.392
Panel C: I(only DVC)					
Policy x Human Capital Measure	0.055	0.546	1.182***	0.799	-0.694
	(0.18)	(1.50)	(2.67)	(1.37)	(-1.55)
Human Capital Measure	-0.779***	-0.667*	-1.040**	-1.545***	0.748*
	(-2.64)	(-1.84)	(-2.42)	(-2.78)	(1.89)
Policy	-0.247	-0.397*	-0.504**	-0.316	-0.189
	(-1.03)	(-1.77)	(-2.32)	(-1.51)	(-0.93)
Observations	2390	2390	2390	2390	2390
Pseudo R2	0.413	0.414	0.417	0.414	0.413
Panel D: Prop(DVC)					
Policy x Human Capital Measure	0.395	0.695	1.045**	1.734***	-1.406*
	(0.87)	(1.42)	(2.03)	(3.14)	(-1.83)
Human Capital Measure	-1.387***	-0.851	-1.065**	-2.136***	1.593**
	(-2.94)	(-1.63)	(-2.24)	(-3.90)	(2.03)
Policy	-0.392	-0.472	-0.456	-0.343	0.112
	(-0.92)	(-1.11)	(-1.19)	(-1.01)	(0.35)
Observations	2410	2410	2410	2410	2410
Pseudo R^2	0.246	0.247	0.247	0.249	0.246
Deal-level controls	Yes	Yes	Yes	Yes	Yes
VC experience	Yes	Yes	Yes	Yes	Yes
Stage Fit	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes

Table 11: Policy effects: Returnee-intensive sectors

Note: This table presents regression estimates of Equation (5). The dependent variables are Domestic, I(At least one DVC), I(only DVC) and Prop(DVC). Variables are defined in Table 1. Columns (1) - (3) report the results using Probit models, Column (4) report the results using Tobit models with a lower bound of 0 and an upper bound of 1. "Ret-intensive" is a dummy variable that equals one if the investment is made to startup firm in Internet & Computers or Communications & Electronics industries. In all regressions, we include year, industry and province dummy variables. In addition to the variables presented, we also include but not report other interaction terms. Standard errors are clustered by venture firm. *,**, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	Domestic	I(At least one DVC)	I(only DVC)	Prop(DVC)
	(1)	(2)	(3)	(4)
Policy × returnee × ret-intensive	0.909	1.285**	1.730***	2.115**
	(1.57)	(2.22)	(2.68)	(2.02)
Returnee	-0.348	-0.098	0.125	-0.299
	(-0.81)	(-0.22)	(0.25)	(-0.36)
CEO	-0.143	-0.141	-0.265*	-0.258
	(-1.09)	(-0.93)	(-1.82)	(-1.11)
Manager	-0.101	-0.144	0.071	-0.066
	(-0.67)	(-0.88)	(0.45)	(-0.26)
Entrepreneur	-0.563***	-0.422***	-0.813***	-0.645***
	(-3.52)	(-3.07)	(-5.38)	(-2.90)
Political	0.273	0.229	0.083	0.201
	(1.24)	(0.97)	(0.38)	(0.56)
Syndication	-0.408***	-0.389***	-0.769***	-0.791***
	(-3.76)	(-3.57)	(-6.49)	(-4.06)
I(FVC & DVC)	0.194	2.186***		0.881***
	(0.88)	(10.79)		(3.24)
VC-Age	-0.020	-0.032	-0.023	-0.050
	(-0.67)	(-1.31)	(-0.97)	(-1.26)
No. of Company	0.119***	0.068***	0.097***	0.092***
	(4.08)	(2.63)	(3.74)	(2.64)
Total Experience	-0.097***	-0.054***	-0.081***	-0.074***
	(-4.16)	(-2.71)	(-3.71)	(-2.64)
Industry Experience	-0.015	-0.003	-0.022**	-0.004
	(-1.21)	(-0.76)	(-2.38)	(-0.65)
EarlyStage	-0.192	-0.179	-0.163	-0.279
	(-1.45)	(-1.38)	(-1.19)	(-1.37)
Growthstage	0.111	0.231**	0.133	0.307*
	(1.07)	(2.19)	(1.24)	(1.93)
Industry FE	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	2390	2390	2390	2410
PseudoR^2	0.370	0.403	0.423	0.255
χ^2	485.075	776.813	783.628	.
Model p-value	0.000	0.000	0.000	.

Table 12: Policy effects: Other provinces
Note: This table presents regression estimates of Equation (5). The dependent variables are Domestic, I(At least one DVC), I(only DVC) and Prop(DVC). Variables are defined in Table 1. Columns (1) - (3) report the results using Probit models, Column (4) report the results using Tobit models with a lower bound of 0 and an upper bound of 1. "Other provinces" is a dummy that equals one if the investment is made in a province other than Beijing. In all regressions, we include year, industry and province dummy variables. In addition to the variables presented, we also include but not report other interaction terms. Standard errors are clustered by venture firm. *,**, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	Domestic	I(At least one DVC)	I(only DVC)	Prop(DVC)
	(1)	(2)	(3)	(4)
Policy × returnee × other provinces	1.607*	1.055	1.765**	1.637
	(1.86)	(1.31)	(1.98)	(1.02)
Returnee	0.698	0.322	0.595	0.213
	(0.82)	(0.42)	(0.70)	(0.14)
CEO	-0.108	-0.114	-0.092	-0.217
	(-0.83)	(-0.76)	(-0.56)	(-0.91)
Manager	-0.186	-0.233	-0.110	-0.191
	(-1.25)	(-1.43)	(-0.61)	(-0.73)
Entrepreneur	-0.607***	-0.492***	-1.005***	-0.721***
	(-3.84)	(-3.59)	(-5.78)	(-3.15)
Political	0.312	0.277	0.092	0.293
	(1.46)	(1.22)	(0.37)	(0.82)
Syndication	-0.389***	-0.365***	-0.440***	-0.766***
	(-3.57)	(-3.34)	(-3.71)	(-3.87)
I(FVC & DVC)	0.156	2.139***	0.000	0.830***
	(0.70)	(10.16)	(.)	(3.02)
VC-Age	-0.020	-0.032	-0.025	-0.050
	(-0.67)	(-1.30)	(-0.97)	(-1.24)
No. of Company	0.118***	0.067***	0.109***	0.092***
	(4.06)	(2.60)	(3.66)	(2.58)
VC Total Experience	-0.096***	-0.053***	-0.090***	-0.075***
	(-4.14)	(-2.68)	(-3.59)	(-2.60)
VC Industry Experience	-0.015	-0.002	-0.027**	-0.003
	(-1.17)	(-0.58)	(-2.43)	(-0.49)
EarlyStage	-0.190	-0.206	-0.221	-0.272
	(-1.44)	(-1.59)	(-1.40)	(-1.31)
Growthstage	0.123	0.222**	0.127	0.343**
	(1.22)	(2.13)	(0.99)	(2.11)
Industry FE	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	2390	2390	2011	2410
PseudoR^2	0.363	0.392	0.436	0.247
χ^2	487.782	738.930	581.204	.
Model p-value	0.000	0.000	0.000	.

Table 13: Exit

Note: In this table we report the regressions with Exit as the dependent variable. In each column, the main independent variables are measures of the presence of domestic VCs: Domestic, I(At least one DVC), I(only DVC) and Prop(DVC). In Panel A, we present the simple Probit regression results of Exit against the measures of domestic VCs. In Panel B, we instrument the domestic VC variables by founders' quality measures and other VCs' characteristics (Equation (6)-(7)). In all regressions, we include year, industry and province dummy variables. In addition to the variables controlled, we also include but not report Num Rounds, Total Num Investors, Max Fund Exits and Max Num Fund Provinces. All variables are defined in Table 1. Standard errors are clustered by venture firm. *,**, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: Probit regressions				
Exit equation				
Domestic	0.035			
	(0.25)			
I(At least one DVC)		0.155		
		(1.00)		
I(only DVC)			0.060	
			(0.38)	
Prop(DVC)				0.093
				(0.54)
Syndication	0.044	0.073	0.051	0.057
	(0.37)	(0.59)	(0.42)	(0.46)
I(FVC & DVC)	-0.281**	-0.382**	-0.266*	-0.288**
	(-2.05)	(-2.54)	(-1.79)	(-2.13)
VC-Age	-0.026	-0.026	-0.026	-0.026
	(-1.25)	(-1.24)	(-1.25)	(-1.25)
No. of Company	-0.010	-0.012	-0.010	-0.010
	(-0.42)	(-0.49)	(-0.42)	(-0.44)
VC Total Experience	0.007	0.009	0.007	0.007
	(0.37)	(0.46)	(0.37)	(0.39)
VC Industry Experience	0.008**	0.008*	0.008**	0.008**
	(1.99)	(1.93)	(2.01)	(2.00)
EarlyStage	-1.603***	-1.624***	-1.606***	-1.613***
	(-7.01)	(-7.12)	(-7.06)	(-7.07)
Growthstage	-0.946***	-0.976***	-0.950***	-0.959***
	(-4.08)	(-4.24)	(-4.15)	(-4.17)
ΔGDP	-1.524	-1.514	-1.533	-1.523
	(-0.54)	(-0.54)	(-0.55)	(-0.54)
ΔFDI	0.490	0.488	0.485	0.484
	(1.52)	(1.51)	(1.50)	(1.50)
Industry FE	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	921	921	921	921
Pseudo R^2	0.155	0.156	0.155	0.155
χ^2	351.112	337.493	345.930	341.552
Model p-value	0.000	0.000	0.000	0.000
Panel B: IV approach				

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Exit equation				
Domestic	-2.694***			
	(-21.67)			
I(At least one DVC)		-2.836***		
		(-36.80)		
I(only DVC)			-3.011***	
			(-32.44)	
Prop(DVC)				-2.989***
				(-33.38)
Syndication	-0.690***	-0.755***	-0.835***	-0.777***
	(-5.76)	(-5.65)	(-5.67)	(-5.44)
I(FVC & DVC)	0.274	1.985***	-0.503***	0.331***
	(1.00)	(12.42)	(-4.38)	(2.73)
VC-Age	-0.026	-0.014	-0.015	-0.019
	(-0.89)	(-0.53)	(-0.57)	(-0.73)
No. of Company	0.122**	0.076	0.068	0.074
	(2.11)	(1.62)	(1.51)	(1.58)
VC Total Experience	-0.102**	-0.067*	-0.061*	-0.064*
	(-2.23)	(-1.79)	(-1.71)	(-1.74)
VC Industry Experience	0.016**	0.012**	0.012**	0.011*
	(2.39)	(1.99)	(2.17)	(1.82)
EarlyStage	0.239	0.451**	0.226	0.250
	(1.34)	(2.35)	(1.18)	(1.24)
Growthstage	0.426***	0.663***	0.408***	0.471***
	(2.84)	(4.35)	(2.61)	(2.97)
Selection equation				
Returnee	-0.011	-0.003	-0.010	-0.014
	(-0.99)	(-0.38)	(-0.91)	(-1.03)
CEO	-0.042	-0.013	-0.037	-0.047*
	(-1.64)	(-0.47)	(-1.49)	(-1.78)
Manager	-0.012	-0.004	-0.010	-0.014
	(-1.27)	(-0.44)	(-1.19)	(-1.30)
Entrepreneur	-0.011	-0.003	-0.010	-0.015
	(-0.98)	(-0.39)	(-0.91)	(-1.06)
Political	-0.032*	-0.010	-0.029	-0.033*
	(-1.74)	(-0.49)	(-1.48)	(-1.90)
Syndication	-0.258***	-0.267***	-0.279***	-0.262***
	(-5.84)	(-5.83)	(-5.86)	(-5.64)
I(FVC & DVC)	0.106	0.701***	-0.163***	0.116***
	(1.04)	(15.56)	(-4.19)	(3.10)
VC-Age	-0.008	-0.004	-0.004	-0.005
	(-0.76)	(-0.49)	(-0.43)	(-0.56)
No. of Company	0.045**	0.027	0.022	0.025
	(2.02)	(1.60)	(1.45)	(1.51)
VC Total Experience	-0.038**	-0.024*	-0.020*	-0.022*
	(-2.15)	(-1.78)	(-1.66)	(-1.68)
VC Industry Experience	0.006**	0.004**	0.004**	0.003*
	(2.39)	(2.00)	(2.18)	(1.80)
EarlyStage	0.143***	0.176***	0.122**	0.144***

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	(2.59)	(3.07)	(2.15)	(2.60)
Growthstage	0.193***	0.245***	0.166***	0.197***
	(3.91)	(5.00)	(3.41)	(4.21)
Industry FE	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	921	921	921	921
χ^2	3687.108	5287.025	3707.026	3929.580
Model p-value	0.000	0.000	0.000	0.000

Table 14: Exit: Interaction Effects

Note: In this table we report the regressions with Exit as the dependent variable (Equation (8)). In Panel A, B, C and D, we interact the presence of domestic VCs measure: Domestic, I(At least one DVC), I(only DVC) and Prop(DVC) with each human capital characteristic respectively and present the result in the corresponding column. In all regressions, we include year, industry and province dummy variables. In addition to the variables presented, we also include but not report deal-level controls, VC experience measures, stage dummies, company-level investment records. Standard errors are clustered by venture firm. *,**, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	Returnee	CEO	Manager	Entrepreneur	Political
	(1)	(2)	(3)	(4)	(5)
Panel A: Domestic					
Domestic x Human Capital Measure	0.560***	0.485*	0.161	-0.128	0.598
	(2.73)	(1.67)	(0.50)	(-0.38)	(0.90)
Human Capital Measure	-0.136	1.221***	1.153***	0.796***	0.802
	(-0.94)	(7.21)	(5.63)	(3.92)	(1.45)
Domestic	-0.257*	-0.091	-0.042	0.031	-0.091
	(-1.70)	(-0.59)	(-0.30)	(0.22)	(-0.69)
Observations	921	921	921	921	921
Pseudo R^2	0.147	0.274	0.211	0.165	0.159
Panel B: I(At least one DVC)					
I(At least one DVC) x Human Capital Measure	0.613***	1.156***	0.527*	0.571*	0.557
	(3.12)	(3.82)	(1.74)	(1.94)	(0.83)
Human Capital Measure	-0.209	0.893***	1.004***	0.564***	0.818
	(-1.29)	(4.86)	(4.84)	(2.65)	(1.43)
I(At least one DVC)	-0.161	-0.149	0.047	0.084	0.040
	(-0.97)	(-0.86)	(0.30)	(0.54)	(0.28)
Observations	921	921	921	921	921
Pseudo R^2	0.149	0.291	0.215	0.169	0.159
Panel C: I(only DVC)					
I(only DVC) x Human Capital Measure	0.435*	0.460	0.161	-0.187	0.315
	(1.87)	(1.42)	(0.48)	(-0.41)	(0.50)
Human Capital Measure	-0.054	1.263***	1.161***	0.782***	1.012**
	(-0.37)	(7.81)	(5.90)	(4.20)	(1.97)
I(only DVC)	-0.115	-0.020	-0.010	0.111	-0.006
	(-0.70)	(-0.12)	(-0.07)	(0.74)	(-0.04)
Observations	921	921	921	921	921
Pseudo R^2	0.142	0.273	0.211	0.163	0.157
Panel D: Prop(DVC)					
Prop(DVC) x Human Capital Measure	0.616***	0.710*	0.264	0.159	0.603
	(2.59)	(1.95)	(0.73)	(0.33)	(0.86)
Human Capital Measure	-0.154	1.158***	1.124***	0.740***	0.797
	(-1.00)	(6.47)	(5.38)	(3.55)	(1.39)
Prop(DVC)	-0.229	-0.068	-0.008	0.049	-0.069
	(-1.26)	(-0.35)	(-0.05)	(0.30)	(-0.44)
Observations	921	921	921	921	921
Pseudo R^2	0.147	0.277	0.212	0.165	0.159
Deal-level controls	Yes	Yes	Yes	Yes	Yes
VC experience	Yes	Yes	Yes	Yes	Yes
Stage Fit	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes

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From Natural Disasters, Humanitarian Aids to Casino:

Public Governance Quality to Reduce Corruption

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From Natural Disasters, Humanitarian Aids to Casino: Public Governance Quality to Reduce Corruption

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Abstract

A natural disaster causes extensive physical damages and normally has a negative impact on an economy, its stock market, and the stock markets nearby. However, the post-disastrous humanitarian relief funds may generate a positive return on the stock market. Using a global sample of 1,778 casino firm-earthquake incidence, we found that casino stocks have extra-ordinary *positive* returns after the occurrence of earthquakes, especially in those countries with a high level of corruption. The revenues and revenue growths of casinos often increase. Nevertheless, a country's governance quality could mitigate the level of corruptions on stock returns. A good governance system is urgently needed to ensure the relief funds are effectively deployed to save lives.

Keywords: Natural Disasters, Humanitarian Aids, Casino, Governance Quality, Corruption, Stock Return

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International Strategic Research of Shenglong Group Based on Global Production Network Construction

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International Strategic Research of Shenglong Group Based on Global Production Network Construction

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Abstract: For a long time, internationalized enterprises in developed countries have dominated and controlled the global production network and held the highest "voice" in the international division of labor, which has given developed countries a significant competitive advantage in international trade and market competition. Therefore, the international competitiveness of multinational companies has become an important criterion for discerning the status of international markets and the strength of international trade of each country. In recent years, enterprises implementing internationalization strategies in China have achieved massive expansion in the international market, and private multinational companies have gradually become the new main force of foreign direct investment driven by market-oriented mechanisms.

Over the past 40 years or so, many private enterprises have, by virtue of their low factor costs and policy first-mover advantages, embedded themselves in the international division of labor system dominated and controlled by developed countries through international trade and the introduction of foreign direct investment, promoting the rapid expansion of economic aggregates and the continuous strengthening of their comprehensive strength. In the process, a number of outstanding private enterprises have emerged for rapid internationalization, and their active performance in the international market has attracted global attention. Ningbo

Shenglong Group Co., Ltd. (hereinafter referred to as Shenglong Group) is a manufacturing enterprise with engineering services and system integration, pump systems, gas distribution systems, transmission systems, electric drive systems and intelligent driving systems as its main products and services. Since establishment, it has been focusing on utilizing its own advantages, building a global production network through its own initiative and striving to promote its internationalization strategy, gradually becoming a private enterprise that promotes regional technological progress. It has gradually become a typical example of internationalization of **private**enterprises that promotes regional technological progress, brand cultivation and market expansion. Based on this, it is of great theoretical and practical significance to deepen the study of internationalization theory and promote the internationalization of private enterprises by studying a series of issues such as the construction of a global production network by private multinational companies to escape the dilemma of "low-end lock-in" development and the formation of a benign ecosystem for the international growth of the company.

Therefore, taking Shenglong Group as the research object, we study in depth the development history of Shenglong Group from a national auto parts export base enterprise to a nationally recognized enterprise technology centre, analyse the inner relationship between building a global production network and the internationalization of private enterprises and reveal the path and law of the establishment of private enterprises' internationalization, so as to provide enterprises with "going out" strategic ideas and relevant government policies. This will provide a new basis for the strategic thinking of enterprises and the formulation of relevant government policies.

Keywords: global production network; internationalization; strategy

1 Introduction

1. 1 Research background

In recent years, China’s enterprises implementing the “going out” strategy have achieved massive expansion in the international market, and private multinational companies have gradually become the new main force of foreign direct investment driven by market-oriented mechanism. With the implementation of “going out” strategy, the way of participating in international division of labor of various companies in China breaks through the traditional trade form, and accelerates the pace of capital export. Foreign investment has reached record highs, and the investment area and scope have been continuously expanded. In 2019, China’s foreign direct investment was $ 136.91 billion, down 4.3% year-on-year, and its influence in global foreign direct investment continued to expand. Flow accounted for more than 10% of the global total for four consecutive years, accounting for 10.4% in 2019; stock accounted for 6.4%, which was the same as last year. In 2020, China's foreign direct investment was $153.71 billion, up 12.3% year-on-year, and the flow scale ranked first in the world for the first time. By the end of 2020, China's foreign direct investment stock reached $2.58 trillion, second only to the United States and the Netherlands. China's influence in global foreign direct investment continues to expand, and its flow accounts for more than 10% of the global total for five consecutive years, accounting for 20.2% in 2020; the stock accounted for 6.6%, up 0.2 percentage points from the previous year. In 2020, China's two-way investment was be basically flat, with synchronous development of bringing in and going out. The continuous

strengthening of the competitiveness of foreign investment provides channels and paths for Chinese enterprises to make use of international markets and resources, cultivate brand advantages and upgrade their technical level.

Ningbo, as a seaport city in eastern Zhejiang, has convenient transportation and unique geographical position. Its export-oriented economy is obvious, with rapid development of multinational operation and investment by enterprises. At the same time, private enterprises in Ningbo account for about 90% of the total number of enterprises in Ningbo. The private economy with small and medium-sized enterprises as the main body is the leading role of the economy and the main driving force of growth, which has made great contributions to the development of Ningbo's economy and occupied a place in Ningbo's economy, especially the foreign investment of Ningbo plays an indispensable and key role in Ningbo's economy. In the past 30 years, private enterprises in Ningbo have been embedded into the global production network dominated and controlled by developed countries by means of international trade and introduction of foreign direct investment, which has promoted the technological progress and continuous strengthening of enterprises' comprehensive strength. In this process, a number of outstanding private enterprises in Ningbo have rapidly internationalized, from Geely Group's acquisition of Volvo Company, Joyson's acquisition of Germany Preh to Shenglong Group's construction of overseas production bases in India and the United States. The active performance of these private enterprises in the international market has attracted worldwide attention. According to statistics, in 2020, Ningbo added 5,777 foreign trade business registration enterprises, with a total of 52,579; there are 23,094 enterprises with import and export performance in the whole year. The export value of private

enterprises (including private enterprises and collective enterprises) accounted for 76.4% of Ningbo's total exports, with an increase of 10.9%; imports accounted for 61.7% of Niongbo's total imports, with an increase of 17.4%.

In recent years, with the promotion of the national "going out" strategy and policy, domestic enterprises have responded to the call of the state and accelerated the pace of internationalization. Under this background, private enterprises in Ningbo have changed from embedding in global production network to actively building global production network by carrying out internationalization research actively and have achieved production internationalization, technology internationalization, market internationalization and brand internationalization by relying on the construction of global R&D network, marketing network and technology network. A group of large multinational companies of "Ningbo Brand" with international influence are gradually growing and becoming typical examples of technological innovation and brand promotion of Ningbo enterprises. Only by understanding how these enterprises build the global production network, how to promote the internationalization strategy with the help of the global production network, and summarizing and analyzing the internationalization development path of private enterprises, can we better formulate the countermeasures and suggestions for the cultivation of multinational enterprises in Ningbo. In order to achieve the above goals, we adopt case study method, make an in-depth study on the actual situation of the international development and growth of Shenglong Group, discuss the influence of external market, environment and internal technology and management on the growth of enterprises, analyze the construction of global production network and international development, summarize the growth path of Ningbo multinational

enterprises, and then put forward some strategies and suggestions suitable for cultivating large multinational enterprises.

1.2 Typicality of cases

1.2.1 Model of global production network

Shenglong Group made clear the importance of globalization strategy at the beginning of its establishment. In the process of its internationalization strategy development in recent 20 years, it gradually integrated itself into the global production network through multi-mode and multi-way globalization development. At the beginning of its establishment, Shenglong Group relied on international cooperation and established joint ventures to achieve initial international production. With the gradual expansion of the enterprise scale of Shenglong Group, the enterprise realizes the further development of production internationalization by means of acquisition and merger, and finally establishes overseas production plants to realize the complete production internationalization, so that it can rely on global production factors to expand their competitive advantage while entering the target market.

1.2.2 Typicality of internationalization

Through foreign investment and cooperation with excellent foreign enterprises, Shenglong Group has mastered the core technology with independent intellectual property rights and improved its overall technical level. The company has fully met the technical index requirements of global mainstream automobile manufacturers in the fields of engine oil pump, transmission oil pump, vacuum pump and camshaft. It has the ability to develop the whole

vehicle synchronously for domestic and foreign main engine plants, fills the gaps in the fields of variable displacement pump of passenger car engine and transmission oil pump of domestic independent brand parts enterprises, provides support for the technical upgrading and product upgrading of independent brand car enterprises, and also opens up a place for such enterprises in the international market. As of December 31, 2020, the company has completed 56 scientific and technological achievements, including 4 projects of National Torch Plan and 52 municipal new products; accumulatively obtained 50 domestic invention patents and 141 domestic utility model patents; obtained 15 invention patents from the United States, Germany, Britain and other countries, and the company's customers cover North America, Germany, Britain, Japan, South Korea, Australia and other countries and regions. From 2018 to 2020, the company’s overseas market sales accounted for an average of about 44.60%.

Therefore, it is necessary to analyze how Shenglong Group can improve its competitiveness through the internationalization strategy of building a global production network, and provide experience for other manufacturing enterprises.

2 Introduction of Case Study Object

Shenglong Group was established in 1996. At the beginning of its establishment, its technology, capital strength and scale were relatively weak. However, it introduced the technology and capital of BorgWarner, a giant in the U.S. auto parts industry, through joint venture in the technology market, and then established IMI Shenglong Machinery Co., Ltd.

through joint venture with IMI, a U.S. company. By relying on the price advantage of raw materials, large-scale production of products and advanced technology of PCL Company of India, the market sales volume and turnover continued to rise. After the previous accumulation, Ningbo Shenglong Group has carried out integrated enterprise innovation on the basis of its own knowledge, information, talent and capital sources and the core industrial layout of automotive powertrain parts, and its continuous growth and progress is inseparable from the internationalization strategy measures adopted at each stage and the improvement of enterprise technology capability.

2.1 Initial stage of market (1998-2007) - change technology in the market and accumulate basic strength

2.1.1 Introduction of foreign enterprises to enhance strength

Due to its own low technology level, weak capital strength and scale, and poor ability to manage and control the operation of multinational companies, Shenglong Group adopted the way of technology marketization and established Warner Shenglong Co., Ltd. as a joint venture with BorgWarner in June 1998. Among them, BorgWarner and Shenglong Group invested 70% and 30% respectively to establish Warner Shenglong Co., Ltd., with a total investment of $22.5 million. With the technical support of European and American technology development centers and the advanced machines and production lines imported from Germany, Warner Shenglong Group has successfully enabled its products and services to meet and exceed customers' expectations. In 2001, Shenglong Group once again implemented the transnational joint venture strategy, and established IMI Shenglong Machinery Co., Ltd.

with IMI Company of the United States, with a total registered capital of $12.5 million. Its main business is to produce environmental protection and energy saving ground (water) source heat pump central air conditioning units. In 2007, Shenglong Group expanded its market and inherited the auto parts industry of Shenglong Group, and established Shenglong Automobile Co., Ltd., a national high-tech enterprise. Its main business performance is to produce silicone oil clutches, plastic fans and pumps for engine cooling, and sell commonly used auto engine parts at home and abroad.

2.1.2 Give full play to advantages and broaden the market

In terms of the geographical sequence of market expansion, Shenglong Group has adopted a phased market expansion model (see Figure 9). Warner Shenglong (Ningbo), a joint venture, is located in Yinzhou District, Ningbo City, mainly producing silicone oil fan clutches, plastic fans and water pumps for cars, trucks and buses. Thanks to the fact that the design and production process of the other company of the joint venture contains many patented technologies, in the leading position in the world, Shenglong's products quickly won the favor of domestic customers. In 2001, it has owned domestic automobile brand customers such as FAW-Volkswagen, Shanghai Volkswagen, Jibei GM, Shanghai GM and Changan Ford, and actively expanded Asian customers, such as Daewoo, Kia and Hyundai in South Korea. In 2006, Shenglong Group has served more than 100 customers in China, including domestic customers such as Dongfeng Motor, SINOTRUK, Jiangzhou, Beiqi Foton, JAC, Shanghai Volkswagen, Changan Ford, Chery, CCEC, Weihai Power, Shanghai Hino and FAW Xihai, as well as foreign customers. In 2012, Shenglong Group developed a series of vehicle products through technological innovation, including passenger cars, commercial vehicles of various

tonnages, buses and off-road vehicles. Its main customers are Ford, General Motors, DaimlerChrysler, Volkswagen, Nissan, Hyundai, Daewoo and major domestic original equipment manufacturers.

2.1.3 Form a brand competition market

At the beginning of Warner Shenglong's business, the technical competition was fierce, but after the establishment of the Production Technology Center, Warner Shenglong's technical capability was further improved. Taking the silicon fan clutch as an example, the improved technology has effectively reduced the engine emissions and noise, and the production has reached the largest commercial vehicle cooling system manufacturer in Asia. It has been recognized as a global A-level supplier by many domestic and foreign automobile brands such as DaimlerChrysler, Hyundai of Korea and Ford of the United States.

At the same time, its subsidiary, Ningbo Shenglong Automotive Powertrain System Co., Ltd., as a high-tech enterprise specializing in the production and sales of automobile engine parts at home and abroad, has become the core enterprise of professional automobile parts industry base in National Torch Plan, and has been recognized as Ningbo Automobile Engine Parts Engineering Technology Center.

2.2 Rapid development stage (2008-2012) – "small fish eat big fish", significant technology upgrade

2.2.1 Merger and acquisition of foreign enterprises and introduction of advanced technology

On October 26, 2009, SLW Automobile Co., Ltd. was successfully acquired by Shenglong Group for nearly $16 million, and more than 90% of its shares were successfully acquired. As a subsidiary of one of the world's top 500 companies in Oklahoma and the world's largest automotive fuel pump manufacturer, the company has brought great influence on the technological transformation of Shenglong Group. There are two experiences that can be summed up in the process of mergers and acquisitions:

First, the timing of mergers and acquisitions. Before 2008, it was learned that BorgWarner intended to sell its subsidiary SLW Automobile Co., Ltd. and divest its automobile oil pump technology in order to focus on core technologies and realize patent transformation. “First come, first served”, Shenglong Group discussed the acquisition with the other party in time, and conducted careful investigation and evaluation. BorgWarner could not accept the initial offer of $100 million, and Shenglong did not rush to acquire it. After the financial crisis broke out in 2008, due to poor market performance, BorgWarner hoped to sell its subsidiary SLW as soon as possible, and its market quotation for SLW Automobile Co., Ltd. was also greatly reduced. Shenglong Group decisively made mergers and acquisitions, which greatly reduced the cost of mergers and acquisitions.

Second, the selection of M&A strategy. The actual targets of this acquisition are BorgWarner's Salison plant in Oklahoma and laboratory in Michigan. For the need of business transition and inheritance, in 2009, Shenglong Group and BorgWarner established SLW Company in Salison City, and acquired and took over the related assets and technical personnel of the pump factory owned by BorgWarner with SLW Company as the main body. According to the articles of association of the joint venture company, the A-series ordinary

shares held by BorgWarner do not have the right to vote and obtain dividends, nor do they undertake the obligation of capital contribution. At the same time, the Shareholders' Agreement signed by Shenglong Group, BorgWarner and SLW Company stipulates that SLW Company will repurchase 300 A-series ordinary shares held by BorgWarner after SLW Company fully pays the purchase amount agreed in the asset purchase agreement to BorgWarner. In September 2012, after the payment was completed, SLW Company repurchased the shares of SLW Company held by BorgWarner, and since then SLW Company has become a wholly-owned subsidiary of Shenglong Group. In December 2012, in order to eliminate the horizontal competition, Shenglong Group transferred its 100% equity of SLW Company to Shenglong Shares in the process of asset restructuring.

2.2.2 Expand operations and transfer to the global market

After that, Shenglong Group adopted a leap-forward market expansion model in the nationalization strategy (see Figure 12). Through this acquisition, it took over SLW's technology, production plants and global market, making it a first-class supplier to many high-end automobile brands such as GM and BMW, and raising Shenglong Group's market share of automobile oil pumps to the second place in the world.

Among them, the main sales markets of engine oil pumps are China, America and Europe, the main sales markets of transmission oil pumps are China and America, and the main sales markets of transfer case oil pumps are America. From 2012 to 2016, Shenglong Group's products were mainly used for original equipment manufacturers, and the share of its main products in China, the United States and the global OEM market increased year by year (see Table 2).

Table 2 Share of Main Products in China, USA and Global OEM Market

Market	Products	2014	2013	2012
China	Engine oil pump	7.13%	6.38%	5.45%
	Camshaft	2.68%	1.50%	0.89%
	Transmission oil pump	1.48%	0.01%	0.00%
United States	Engine oil pump	17.50%	16.99%	17.84%
	Transmission oil pump	2.76%	2.51%	2.45%
	Transfer case oil pump	40.42%	33.44%	28.91%
Global	Engine oil pump	4.16%	3.77%	3.44%
	Camshaft	0.72%	0.40%	0.23%
	Transmission oil pump	1.07%	0.67%	0.63%

Note: The company's share in the OEM market is calculated according to the proportion of the actual sales volume of each product to the OEM market demand of each product.

Source: IPO Prospectus of Ningbo Shenglong Automitive Powertrain System Co., Ltd. (Declaration Draft).

2. 2. 3 Rely on technical competition to establish brand

At present, the strategy adopted by Shenglong Group is to combine technology competition with brand competition to improve market competitiveness.

In terms of technology competition, Shenglong Group successfully acquired SLW, which made Shenglong Group make a qualitative leap in the field of oil pump technology. At the same time, Shenglong Group, which has mastered the most advanced IT technology, has changed from a passive market follower to an active market leader.

In terms of brand competition, Shenglong Group has gradually established its brand through technological upgrading, and has improved its brand management system, enriched its brand development experience and improved its brand supporting ability. After years of development, Shenglong Group has successfully entered the global supply chain of automobile manufacturers such as Jaguar Land Rover and Peugeot Citroen, and established cooperative relations with domestic enterprises such as DPCA, GWM , Jiangling Motors, Geely Automobile and Chery Automobile. In 2009, after Shenglong Group successfully acquired BorgWarner's oil pump plant and established SLW Automobile Co., Ltd., it set up a research and development and sales center in Detroit, specializing in producing various oil pumps for world-class automobile manufacturers.

2. 3 Integrated innovation stage (2013-2017) - strong alliance to expand business in all aspects

Through the early internationalization strategy measures of “bringing in and going out”, Shenglong Group has made great progress in technical ability, financial strength and management experience. Therefore, in the next operation, on the one hand, due to the

development trend of lightweight automobile engines, higher requirements are put forward for low noise and low emission, Shenglong Group seeks the improvement of camshaft technology through transnational operation and walks the road of compound development; on the other hand, build integrated and innovative enterprises and broaden the development path.

In April 2012, Ningbo Shenglong Automotive Powertrain System Co., Ltd, a subsidiary of Shenglong Group, and PCL of India established a joint venture specializing in the production of camshafts for automobile engines, namely Ningbo Shenglong PCL Camshafts Co., Ltd. Ningbo Shenglong Group and India PCL hold 90% and 10% shares respectively. In order to further improve the camshaft industry chain, Shenglong Co., Ltd. invested and established its holding subsidiary Huzhou PCL in October 2013, with a registered capital of $8.8 million, it is positioned in the camshaft blank production factory, and plans to introduce advanced manufacturing technology and production lines related to camshaft blank from abroad to support or sell the finished camshaft products of Shenglong PCL, thus reducing the company's operating risks and production costs.

2.3.1 Compound development to achieve leading market

When Shenglong Group competes with its counterparts in the market, it adopts the cost-technology combination competition mode. The so-called technology-driven enterprise means that the driving force of enterprise growth mainly comes from technology, R&D capability is the most important driving force among various capabilities of enterprises, and the main force of cost-efficient enterprises to win comes from cost control and enterprise operation efficiency. Cost-technology-based enterprises are enterprises with two types of characteristics: technology-driven and cost-efficient, which are collectively called compound

enterprises.

According to the price advantage of raw materials and the output of most products, Sanlong PCL Company can effectively improve production efficiency, which leads to a decrease of 14.67% in wages and cost units and production costs. With the advanced technology of PCL Company of India, the supply of original supporting models for Changan Ford and other customers continued to increase and finally realized batch, and the number of new models continued to increase, which finally led to a steady increase in market sales and turnover, with an increase of 85.71% in 2014 and 79.61% in 2013 compared with the previous year.

While continuing the transnational business of automobile oil pump and engine cooling system components, Shenglong Group has also introduced camshaft technology through joint venture, and set up production bases in Ningbo and Huzhou, China. It adopts a gradual development path, participates in market competition with technical and price advantages, and cooperates with domestic customers first, and then with overseas customers.

2.3.2 Gradual improvement of integrated innovation mechanism

The integrated innovation of enterprise can mainly solve two problems: obtaining knowledge, information, talent and capital sources needed for innovation, and building a platform to integrate resources to form collaborative innovation. After the transnational operation in the first three periods, Shenglong Group has accumulated rich knowledge, information, talent and capital sources, and built an integrated innovation platform.

Advanced and diversified knowledge sources: Ningbo Shenglong has its own key technologies, independent intellectual property rights and advanced product design

technology. The company has been focusing on the research, development, production and sales of powertrain parts such as engine oil pump, transmission oil pump and camshaft. After years of continuous R&D investment and experience accumulation, the company has mastered the core technologies with independent intellectual property rights, which are in line with the development direction of energy conservation, emission reduction, intelligence and modularization in the parts industry, covering various aspects such as material application, product development, precision manufacturing, product verification and testing (see Section 1 of this Chapter for specific data). The company uses digital design software such as AutoCAD, Catia, ProE and UG in product design method to realize complete data transmission with domestic and foreign main engine plants, and uses professional design analysis and verification software such as Pumplinx and AMESim to ensure design quality and shorten development cycle.

The information source of interactive feedback - Shenglong Group has mastered rich experience in synchronous development and host matching ability. Shenglong Shares, a subsidiary, is an independent brand automobile powertrain parts enterprise that entered the global vehicle supporting parts procurement system earlier. With years of technical accumulation and product development practice, Shenglong has reached the technical indexes of major global automobile manufacturers in the fields of engine oil pump, transmission oil pump, vacuum pump and camshaft. The group visits leading OEMs in China to enable them to develop vehicles simultaneously with OEMs at home and abroad. Overseas, the group uses key industry standard issues to obtain international information, conduct advanced research and development, keep up with technological developments and respond quickly to customer

needs.

Integration of Chinese and foreign talent sources: Shenglong Group has set up an experienced international technical team. After the establishment of Shenglong Shares in 2007, it has fully inherited the R&D team of auto parts of Shenglong Group, and on this basis, it has continuously strengthened the construction of technical team. After the acquisition of BorgWarner's pump factory in 2009, Shenglong Group Technology Center absorbed experienced North American technical teams, and realized team integration by sending technical personnel to exchange and learn, sharing technical resources, etc., and established an international technology development platform.

Expanding sources of funds: IPO was carried out for Shenglong Group's shares at the end of 2016, and its shares were successfully listed on the A-share main board in 2017. First of all, the successful implementation of transnational operation has won rich profits for Shenglong Group. Secondly, the Group has a good credit status, has good cooperative relations with many banks and other credit institutions, and has held equity interest of Qinhuangdao Commercial Bank and Bank of Cangzhou, which facilitates the procedures of obtaining bank loan financing in cross-border mergers and acquisitions. Thirdly, as a national high-tech enterprise, the company's scientific and technological awards and special subsidies are also important sources of funds. From 2012 to 2014, the government subsidies confirmed by the company were RMB 5,811,200, RMB 7,322,400 and RMB 2,929,200 respectively. Finally, Shenglong issued 50 million shares through IPO and raised RMB 750 million, thus opening up public equity financing channels.

2.3.3 Increasingly reasonable industrial layout structure

From 2013 to 2014, the gross profit margin of these three main products accounted for 97.41% and 97.02% of the gross profit margin of core business respectively. In 2015, gross profit of main business increased by 9.75% compared with the same period of last year, and the structure of gross profit margin was stable and highly concentrated. The integration of R&D centers, production bases and foreign trade companies of auto parts has given birth to the international business philosophy of "integration of production and marketing". In 2015-2017, Shenglong Group has formed an increasingly perfect industrial structure, consolidated its market position and achieved annual increase in gross profit by continuously distributing new projects, supporting new models and realizing mass production.

In 2012, production sites were set up in Ningbo and Huzhou, China. In 2014, Shenglong Group set up a processing center in Ohio, USA; it set up a production base in Pune, India in 2015;

2.4 Transformation and upgrading stage (2018-present) - industrial upgrading and sustainable market development

2.4.1 Increasingly clear internationalization strategy of the company

Shenglong Group has formulated three important plans for the future development of the company: first, strategic development, second, technology and product development plan, and third, national and international market development plan. The strategic plan for the development of parts industry formulated by Shenglong Group is committed to grasping the development direction of energy saving, emission reduction, low noise, lightweight,

intelligence and modularization of automobile industry at all times, so as to be market-oriented, take product research and development and technological innovation as the driving force, and give full play to the advantages of production technology and manufacturing process. It further broke the technical monopoly of foreign enterprises in the field of core components of automobile powertrain, and strived to find the technical solutions of the company to solve the world-recognized automatic suction system, powertrain lubrication system, key components of automatic drive and industry leaders.

The technology and product development plan formulated by Shenglong Group is committed to relying on the existing state-level enterprise technology center, improving the R&D system and R&D institutions, further integrating international R&D teams and R&D resources, and striving to build a world-class laboratory with product verification function and testing and verification equipment from parts to engine bench and transmission bench. In the direction of technology and product development (see Table 3 for new products planned to be developed), adhere to the development direction of energy saving, emission reduction, low noise, lightweight, intelligence and modularization, reduce the raw material consumption of parts, improve transmission and control efficiency, improve fuel economy and driving comfort. Shenglong Group's domestic and international market development plan is mainly committed to strengthening domestic and international cooperation and new product development.

2.4.2 Turn losses into profits under the epidemic and make steady efforts

From the raging epidemic at the beginning of 2020 and the decline in orders in the first half of the year, to bucking the trend and exceeding expectations in the second half of the year,

the company's management adjusted its strategy in time and made concerted efforts to achieve the established main business objectives; at the same time, the company insisted on R&D innovation and customer expansion, and mainly promoted the following aspects:

First, steadily promote lean production, reduce costs and increase efficiency. The company has completed the construction of intelligent factory in CRRC base as a whole, operators and managers at all levels can know the actual situation of workshop production and operation at any time. All necessary process parameters in the production process are effectively collected and stored, and real-time whole process capability analysis and equipment running status data are provided, which can accurately trace the process data of parts used by each product, and achieve the goal of continuous improvement through subsequent analysis of manufacturing process data. In addition, highly automated production lines, whole process error proofing technique and robots are also widely used.

Second, promote the research and development of new products and technologies in an orderly manner. On the one hand, the company entered the field of commercial vehicle oil pumps, taking the cooperation with Weichai Power as an opportunity to make a breakthrough. In terms of new product extension, it completed the acquisition of mechanical pumps and electronic pumps of Warner Shenglong and set up electronic control pumps and new energy business departments. In view of the new energy technologies such as hybrid power and pure electric power and the wave of vehicle electrification transformation, the company accelerated the project approval and R&D of electronic parts in new energy thermal management system module, intelligent brake system module and transmission drive system.

The third is to integrate the operational functional structure. In order to further improve

the management efficiency of operation functions, strengthen product quality control, reduce product customer complaints, share resources and optimize the management structure, the management structure of operation functions in Ningbo and Huzhou parks was integrated and managed by the Vice President of Operations. At the same time, the manufacturing system structure of Ningbo Park is streamlined, with fewer reporting levels, the Manufacturing Manager directly manages the production workshop. Introduce Toyota policy management system to ensure the achievement of business objectives and maximize organizational results.

3 Case Theory Analysis

3.1 Basis of case theory

3.1.1 Definition of the connotation of global production network

The concept of production network itself belongs to the organizational category and does not involve spatial layout. The geographical latitude added by international production network can be regarded as the internationalization of the production network concept. Ernst (1999) and Dicken (1999) put forward the concept of global production network, which has gradually become an important research direction in the field of international trade. International production network is a new and changing organizational structure gradually formed under the tide of globalization, which is used to represent the increasingly extensive and systematic global production system. This system includes different stages of the value chain, and the participating entities do not necessarily have ownership of each other. The emergence and development of the concept of global production network is a development

process that is closer to the real world with the development of international trade and international production theory. The network development of geographical distribution has formed a huge production network of production, distribution, consumption and service in the world from the global decomposition of the value chain within a single enterprise to the decomposition of value chain among various industries, and even through the combination of global value chains among various industries and enterprises. International production network is an important organizational innovation, and its emergence enables multinational companies to better deal with the conflicts between their own specialization and cooperation with host country enterprises (Borrus, 2000). Based on the research of global value chain, global commodity chain and production network, foreign scholars Henderson (2002) and Coe (2004) put forward the research framework of global production network successively.

3.1.2 Research on enterprise internationalization

Internationalization is an important branch of national trade theory, and it has always been the focus of scholars' research. Earlier studies by scholars focused on the internationalization motivation and competitiveness formation of enterprises in developed countries, including heterogeneity, eclectic theory of national production (Hymer, 1960; Dunning, 1977; Cantwell, 1993). With the rapid growth of emerging markets (Cuervo-Cazurra, 2008), the internationalization of enterprises in emerging economies has become an important research topic in the field of international trade (Buckley, 2002; Luo, 2007).

In terms of measuring the internationalization level of enterprises in emerging market countries, based on Porter's competitiveness model, Trewar (1995), Hamel & Prahalad (1989,

1993, 1994) and domestic scholars Jin Bei (2004) and Tang Tianwei (2013) studied the internationalization degree of enterprises and made comprehensive evaluation mainly from the aspects of multinational companies' multinationalization (internationalization), market scale and operating efficiency. Sullivan (1994) proposed multi-dimensional composite indexes to measure the internationalization level of multinational companies; UNCTAD (1990) constructed the transnationality index of multinational companies to measure the influence of global multinational companies. Lu Tong (2000), a domestic scholar, proposed to use the internationalization cobweb model to measure the internationalization level of multinational companies. China Entrepreneur (2011) published the internationalization index of Chinese enterprises to evaluate multinational companies in China. There are also some scholars who pay attention to the relationship between internationalization level and competitiveness of multinational companies. The main viewpoints are linear relationship (Alfredo, 2008; Wang Fusheng et al., 2009), inverted J-shaped relationship (Games, 1999), U-shaped relationship (Ruigrok, 2003; Lu Huiling, 2008), S-shaped relationship (Contractor, 2003; Yang Yichen and Yu Ying, 2008), etc.

3.1.3 Relationship between global production network and internationalization

Gereffi (1994, 1999) proposed the GVC analysis framework based on the inheritance and development of value chain ideas (Porter, 1985; Kought, 1985; Krugman, 1986), and divided the GVC drive models into two categories according to the different characteristics of leading firms and industries: producer-driven and purchaser-driven models. Humphrey and Schmitz (2002) further divided GVC drive models into producer-driven model, purchaser-driven model and mixed-driven model, which created a new theoretical perspective

for the study of international competitiveness of enterprises. Catherine J. Morrison (2006) thinks that within the framework of GVC, each specific link of product production can be configured on a global scale, so the intermediate products produced by different links of intra-product division of labor have obvious differences in international market power in different links of international division of labor. AndreasIrmen (2010) et al. also proved the correctness of this view by using game theory. He found that international brand owners actually have higher international competitiveness than processors.

In recent years, domestic scholars Meng Dan (2012), Zhu Huayou and Wang Jici (2013) have also discussed the transformation and growth of enterprises from the perspective of international production network construction, but the theoretical research combining the two is rare. In addition, there is a lack of systematic theoretical and empirical research on how to construct the global production network of multinational companies and how to promote the growth of enterprises through the construction of global production network. Based on this, from the perspective of global production network, this case discusses the specific ways and means for private multinational companies to enhance their international competitiveness by building global production, R&D and brand sales networks.

3.1.4 Research framework

The above research results show different views of domestic and foreign scholars on foreign direct investment from different angles, which provides a very solid theoretical basis and reference for this paper to analyze the pattern of foreign direct investment of private enterprises in Ningbo. Through combing the existing literature, we can find that the research on multinational companies' operation at home and abroad mainly focuses on the influencing

factors of internationalization strategy, entry mode , etc. Most of the research mainly analyzes the transnational operation on the surface, while the research on the enterprise level, especially the case study, is less. Ningbo, as a developed area of private economy in Zhejiang Province, its transnational operation is not completely consistent with the theoretical expectation. The study of Ningbo's internationalization strategy development through typical cases can complement the existing internationalization strategy theories; at the same time, it can also provide strategic reference for Ningbo's internationalization strategy policy making. Based on the above-mentioned theoretical and practical background, this study summarizes and combs the internationalization strategy mode of private enterprises in Ningbo by consulting relevant literature and relevant case studies. At the same time, combined with relevant research and analysis, it puts forward some relevant countermeasures and suggestions for better promoting the internationalization strategy of private enterprises in Ningbo.

3. 2 Analysis of global production network construction and internationalization strategy mechanism

3. 2. 1 Build a global R&D network to enhance technical strength

With the expansion of overseas market demand and the development of global knowledge production mode led by network information technology, western large multinational companies began to set up R&D institutions around the world. Because of the innate lack of technical strength in the early stage, Chinese local enterprises have long learned

from enterprises in developed countries by introducing and imitating parts and technologies. Since 1990s, Chinese enterprises have continuously kept up with the global industrial development trend, broadened knowledge acquisition channels and enhanced independent innovation capability through internationalization R&D.

According to the early studies on multinational companies in developed countries, the initial purpose of establishing R&D institutions overseas is only to help headquarters transfer technology and support local production activities; with the expansion of production and sales activities, R&D institutions expanded into local technology organizations to develop products or processes suitable for the host country market; after that, it was further upgraded to a global technology organization to develop new products and processes for the global market. Cheng and Bolon (2013) believe that multinational companies set up overseas R&D institutions not only to improve their adaptability to the needs of host countries, but also to obtain important innovation resources, such as scientific talents, and coordinate each R&D institution to subdivide the innovation process at the level of technology, knowledge and external resources. Different from traditional enterprises in developed countries, Minin et al. believe that the initial purpose of Chinese enterprises to establish overseas R&D institutions is only to learn technology, obtain technical knowledge spillovers through interaction with the host country environment, and then transfer technology and knowledge back to the corporate headquarters and integrate with domestic R&D activities to improve the R&D capability of the parent company. In addition to technology absorption, another purpose of Chinese enterprises is to directly utilize the innovation resources of the host country, hire overseas quality R&D talents, and allow Chinese expatriate employees to improve their R&D and

innovation capabilities in cooperation with foreign experts.

Conclusion 1: The initial stage of establishing overseas R&D institutions is to learn and absorb new knowledge, then transfer it to the enterprises in home country to improve the R&D capability of R&D headquarters in China. Finally, enterprises can further extend this technical capacity to overseas R&D institutions to realize the localization of products and processes in overseas markets.

3.2.2 Build a global marketing network to enhance brand influence

Production and sales channel supply of enterprises originates from the international expansion of supply chain, which is a complex international supply system composed of core enterprises and other enterprises that have direct or indirect material supply relationship with them. The international channel position of suppliers not only makes suppliers contact and obtain corresponding resources, but also restricts their behavior by the relationship structure of international channels, which has an important impact on resource acquisition, business decision-making, supplier management practice selection and performance results of manufacturing enterprises. However, due to the lack of understanding of the relationship and structure of suppliers' nationalized channels, enterprises are always faced with the problem of how to use the location of suppliers' internationalized channels when managing suppliers, which greatly restricts the use of suppliers' resources and capabilities. Good cognitive competence of international channels can help enterprises effectively identify the position of suppliers' international channels, evaluate the information and reputation resources they can bring, and enhance the integration level between enterprises and suppliers.

With the intensification of market competition, manufacturing enterprises not only

require suppliers to provide the required materials on time and efficiently, but also require suppliers to have the resources and capabilities to help enterprises realize their strategies and achieve competitive advantages. The influence of suppliers' international channel location on enterprise performance is mainly manifested in two aspects. On the one hand, the excellent international channel location enables suppliers to obtain a large number of heterogeneous materials, services, knowledge and information resources more quickly and accurately. This will further enhance the possibility of suppliers' innovation and learning, promote the effective integration of internal and external resource information of suppliers, so as to promote the technological innovation and product upgrading of suppliers, enhance the ability of suppliers to meet the needs of manufacturing enterprises in cost, quality, delivery reliability, flexibility and innovation, and show satisfactory supply performance for enterprises. On the other hand, the advantageous national channel location also provides more opportunities for suppliers to develop corresponding norms and behavioral standards and thus effectively control various resources, which greatly enhances the willingness of manufacturing enterprises to let suppliers participate in the new product development process, and provides great convenience for enterprises to obtain and integrate more superior resources related to operation and innovation through cooperation with suppliers (Li Na et al., 2017), thus promoting the improvement of enterprise performance in operation and innovation.

Conclusion 2: The channel internationalization of suppliers has a positive impact on the acquisition and utilization of knowledge, information and other resources. At the same time, suppliers who occupy a good international channel position can help enterprises obtain novel and valuable knowledge and information that they are not easy to access, so as to develop

more practical development strategies and market development strategies.

Conclusion 3: A lot of important information can be obtained in brand internationalization. In international business activities, enterprises can use the establishment of brand internationalization system to obtain various information of domestic and foreign markets in time, including the recognition degree of products in the market, customers' demand for products, users' feedback on products and marketing environment, which is helpful for enterprises to adjust their product markets and gain market competitive advantages.

3.2.3 Build a global production network and improve the ability of production resource allocation

With the deepening of globalization and vertical decomposition of value chain, internationalization is becoming an important means of enterprise development. Especially in recent 30 years, the rapid development of global production internationalization has made it the most important carrier of global economy. As a new ecological environment of enterprise, the internationalization of manufacturing has greatly affected the survival and development of every enterprise. Facing the challenge of the realistic environment to traditional theory, all disciplines are seeking new theoretical breakthroughs. Existing research on production internationalization holds that broader global development provides a new driving force for the development of internal capabilities of enterprises (Gulatieetal., 2000) and a new source of external economy, which is a better growth model of enterprises.

Under the new ecological environment of enterprise, the accumulation of internal resources and capabilities is not the only driving force and decisive factor for enterprise

growth. Under the external environment of fierce competition and great uncertainty, the survival and development of enterprises need more external forces, and the resources and advantages owned by enterprises become another important decisive factor and symbol of their growth. Compared with the proprietary resources and capabilities that mainly exist within the enterprise, the advantages of enterprise are resources and capabilities obtained from internationalization through the development of external relationships.

Conclusion 4: The competitiveness gained by enterprises relying on production internationalization is different from the competitive advantage of traditional single enterprises. At the same time, enterprises gain more benefits than other international cooperation nodes due to better international structure, international position and international relationship.

3. 3 Shenglong Group: Analysis of internationalization strategy based on global production network construction

3. 3. 1 Internationalization of R&D

In the early stage of development, Shenglong Group mainly engaged in products with low technical content, relying on price and quality to obtain market and profits, but this practice would lead to the expansion of competition pressure in the same industry and limit the development of enterprises. Shenglong Group realized the importance of technology at an early stage, but at the beginning, due to the limitation of domestic technological level and the monopoly of foreign companies' technology, Shenglong Group chose the way of joint venture to realize R&D internationalization in the early stage. Through the development of R&D

internationalization strategy, the quality and innovation level of its own products were improved, and it gained development space in domestic and international markets, forming its own unique competitive advantage; when the funds were sufficient, Shenglong Group entered the target market through mergers and acquisitions. During mergers and acquisitions, the Group obtained the technology and R&D center of the acquired enterprise, relying on the development of acquired enterprise to form a local-centered development mode and gain local competitive advantages; after that, Shenglong Group developed steadily. After having a certain market foundation, it can better obtain the needs of local purchasers and adjust its products in time to expand its competitive advantage by setting up R&D bases directly in the target areas.

Conclusion: The internationalization of R&D has enabled Shenglong Group to get rid of the pressure of competing on product price and quality in China and form its own competitive advantage. At the same time, R&D centers closer to the target market can also know the customer needs of target area more quickly and accurately, and enhance its competitive power.

3.3.2 Channel internationalization

As an intermediate link enterprise in the industrial chain, Shenglong Group's upstream suppliers mainly include raw material suppliers, equipment and non-production material suppliers, production auxiliary materials and MRO suppliers. At the initial stage of market, the raw materials for production of the Group mainly come from the domestic market. However, in order to provide products and services that meet and exceed customers' expectations, Shenglong Group has imported advanced technology, processing equipment and

testing equipment from abroad, such as large-tonnage die-casting equipment, precision CNC lathe, vertical machining center and several dust-free assembly lines.

Shenglong Group's early channel internationalization is mainly aimed at the introduction of processing equipment, adopting domestic raw materials to form a low-cost competitive advantage, and introducing international advanced production equipment to provide products and services to meet customer needs to enter the international market. When the Group has certain strength, it began to internationalize the procurement of raw materials, considering the price and quality, and selecting the most suitable raw material suppliers. For downstream customers, Shenglong Group mainly relied on the domestic market in the early stage, and developed the channel internationalization strategy to neighboring countries by establishing its own brand in the domestic market with technological advantages. After that, Shenglong Group adopted the way of acquisition, took over the market and customers of the acquired enterprises, became the first-class supplier of international high-end brands, which increased the international market share of Shenglong Group and also formed its own brand awareness, so as to realize the promotion and development of channel internationalization and realize the distribution of customers covering many countries and regions by relying on its own advantages.

Conclusion: Channel internationalization has different impacts on Shenglong Group in different stages of development. In the early stage, it gave the Group a competitive advantage in terms of production technology. In the development stage, channel internationalization had expanded the international market share and international brand awareness of enterprises, and promoted the internationalization process of Shenglong Group’s products and services.

3.3.3 Brand internationalization

At the initial stage of market, Shenglong Group introduced the technology and capital of BorgWarner of the United States through joint venture. At this time, Shenglong Group mainly relied on the joint venture brand Warner Shenglong to internationalize its brand, and used Warner Shenglong to expand its market and expand into the international market. At the rapid development stage, Shenglong Group relied on the acquisition of SLW to obtain technology and global market, while establishing the brand and promoting the internationalization of its own brand. At the stage of integrated innovation, independent brands achieve the goal of internationalization and have certain influence in the international market.

The brand internationalization strategy of Shenglong Group is closely related to its own development. In the early stage of development, it occupied a certain market share through the internationalization of joint venture brand. Using joint venture brand to open up the market can more quickly obtain superior resources that independent brands do not have. It promoted the internationalization of independent brands through the development of joint venture brand. In the stage of rapid development, Shenglong Group acquired internationally renowned enterprises, promoted the influence of independent brands rapidly through the brand awareness of acquired enterprises, opened the international market for independent brands and established the influence of independent brands, so that independent brands can enter the international market more quickly and competitively to increase brand trust and enhance their competitive power.

Conclusion: Shenglong Group relies on multi-mode and staged brand internationalization strategy to promote the internationalization of its own brands step by step

and establish a strong brand influence. The internationalization of the early joint venture brand expanded the market scope of Shenglong Group from Ningbo to the international market, and the internationalization of acquired brands in the rapid development stage enabled Shenglong Group to enter the target market more quickly, more competitively and on a better foundation, and finally realized the internationalization of its own brand, thus driving the internationalization development strategy of the enterprise.

3.3.4 Production internationalization

In the stage of rapid development, Shenglong Group successfully acquired Salison Oil Pump Plant under BorgWarner in the United States. In the stage of integrated innovation, a production base was set up in Pune, India, and five processing centers were set up in the United States in 2014; it established European (German) production and R&D bases through mergers and acquisitions actively. In the upgrading and transformation stage, Shenglong Group set up a production base in Pune, India in 2015, forming the global production bases in four places in China (Ningbo, Huzhou), the United States (Ohio) and India (Pune). In the early stage of development, because the internationalization strategy of enterprises did not reach a certain degree, the processing and production of Shenglong Group were carried out in China. With the successful implementation of the acquisition strategy in the rapid development stage, Shenglong Group has internationalized its production. In the stage of integrated innovation, with the further expansion of international market, the backward production internationalization cannot meet the market demand, so Shenglong Group set up overseas production bases and processing centers. At this time, the production base was located in India mainly to obtain the local cheap labor force and the advanced technology of

Indian automobile industry, while the processing center was set up in the United States, finally forming the production internationalization pattern in four places in three countries. The production center located in the target market can reduce the cost of obtaining raw materials, transportation and labor force, at the same time, it can provide better communication and cooperation with customers in the host country, provide them with more targeted products and services, and improve its competitive advantage.

The production internationalization of Shenglong Group has brought Shenglong Group advantages in resources and labor force at different stages of development, which not only reduces its production costs, but also makes Shenglong Group more competitive in the target market. In some important host country markets, the production internationalization is also a window for Shenglong Group to communicate with customers, which is closer to customers and target markets, can find problems in time, find market demand, provide more targeted products and services, and improve the competitive power of the Group.

3.4 Internationalization performance analysis

3.4.1 Leading the market

In the development of manufacturing industries, many companies under Shenglong Group cover industries such as automobile core parts, ground source heat pump air conditioning, chemical industry. The auto parts are the pillar industries of the Group and have also been rated as A-level suppliers by many automobile brands. In 2020, the total revenue of auto parts manufacturing industry, the main business of Shenglong Group, reached RMB 1.2 billion.

In 2020, Ningbo Shenglong Group was awarded the annual Zhejiang Provincial Government Quality Award, which was the only enterprise in Ningbo that was awarded this award. Zhejiang Provincial Government Quality Award is the highest quality award established by the provincial government in Zhejiang Province, and it is the recognition and reward of enterprises that have achieved remarkable economic and social benefits by the provincial government.

In the 23rd Building & Decoration Fair in 2021, Shenglong Group ranked among the top 100 comprehensive enterprises in Ningbo in 2021, and ranked 34th in the top 100 manufacturing enterprises in Ningbo in 2021.

3.4.2 Leading technology

As the manufacturing and operation base of WFI in China, IMI Shenglong Machinery Co., Ltd., a subsidiary of Ningbo Shenglong Group, has fully introduced the leading technology of WFI in R&D, installation and manufacture of energy-efficient air conditioning. IMI Shenglong has won many honors such as Top Ten Brands of Ground Source Heat Pumps and Engineering Technology Center by virtue of the R&D and production of high-end ground water-source heat pump products and the design, application and construction research institutions of ground source systems.

In recent years, Shenglong Group has continuously improved the level of automation and informationization, strengthened the strategy of strengthening enterprises with talents while building an intelligent and environmentally friendly production and R&D base, and paid attention to personnel training and reserve echelon construction. At present, the company has a research and development team of hundreds of people. In the past three years, 77 high-level

talents from home and abroad have been introduced and accumulated 50 domestic invention patents and 141 domestic utility model patents; it has obtained 15 invention patents from the United States, Germany, Britain and other countries, among which the authorized utility model patents include electronically controlled silicone oil clutch pulley, electronically controlled silicone oil fan clutch, wind shield integrated clutch.

From 2012 to 2018, the total operating income of enterprise maintained steady growth over the years, from RMB 626 million in 2012 to RMB 1.31 billion in 2018. In addition, compared with 2012, it reached a growth rate of about 48.3% in 2014; in 2016, compared with 2014, it reached a growth rate of about 34.9%; compared with 2016, the growth rate in 2018 reached about 4.5%. The highest growth rate of operating income was achieved in 2014. In 2020, due to repeated epidemics, the annual total operating income of enterprise was affected. The operating income of enterprise reached RMB 1.222 billion. Although it is lower than that of 2016 and 2018, it is still a considerable operating income.

4 Research Conclusion and Enlightenment

4.1 Use the dual means of "bringing in + going out" to acquire technology

With the rapid development of science and technology in today's society, China is increasingly aware that science and technology are the main forces to promote economy and society. On the one hand, the market urgently needs the upgrading of science and technology. China's current innovation ability is insufficient, and many enterprises are discouraged by high risks and high costs. In order to speed up economic and social development and promote enterprise innovation, the state has put forward many policy supports, among which the

policy of “bringing in and going out” has been tried by many enterprises, and the state encourages enterprises to introduce foreign capital or technology. “Going out” means going to the world market by means of foreign investment, which not only relieves the pressure of technological innovation, but also broadens the market. Shenglong happened to seize this point. Due to the backward technical level, weak capital strength and scale in the early stage of development, Shenglong Group chose the strategic mode of “bringing in” and “going out” in its operation. “Bringing in” means acquiring key technologies through joint ventures and mergers and acquisitions, and making up for technical defects by introducing foreign capital and foreign technologies. “Ggoing out” is foreign investment cooperation. Whether it is “bringing in” or “going out”, what matters is not traditional capital, equipment, other resources or management experience, but technology. For other enterprises, it is also a key development strategy to flexibly use similar means such as “bringing in” and “going out” when they find that their own capabilities cannot be broken through. Through similar means, they can introduce what they need, make up for their own shortcomings, and actively practice national policies while opening up markets and upgrading technology.

4.2 Use “marketing + brand building” to steadily enhance the international market position

With the development of economic globalization, enterprises will inevitably be affected by the international market, which is both a threat and an opportunity for enterprises. The internationalization strategy of brand is a necessary condition for enterprises to further expand and develop, and it is also an effective way to take advantage of international market

opportunities. The development of international market is a process of gradual development, and brand internationalization should be closely related to market internationalization. The development of enterprise market internationalization is also promoting the progress of brand internationalization. At the same time, the promotion of brand's international position also drives the rise of enterprise's global market position and the expansion of market scale. The international development strategy of "marketing + brand building" can make the international position of enterprises more stable.

Shenglong Group promoted the internationalization status of its own brand in multiple levels and ways. At the beginning of its establishment, it opened the international market by relying on advantages of joint venture brand. After the products had a certain share in the international market, the enterprise turned to use its own brands through acquisitions and mergers to realize the international development of its own brands. In the process of internationalization, private enterprises should make clear and effective use of their own advantages to enter the market through brands and drive brands through markets.

4. 3 Enhance core technology based on "horizontal cooperation + independent research and development"

If enterprises want to truly realize globalization, they must have their own core technologies. At present, some Chinese household appliances and clothing manufacturers have achieved certain international competitiveness. However, it should be noted that most of the main products of these enterprises belong to the fields of low technology and low added value, and they mainly gain certain advantages in the international market by low cost and

low price. From a global perspective, the competition among enterprises is finally reflected in products with high technology content and high added value. Therefore, the development of core technology is of great importance to the in-depth development of China's manufacturing industry in the world.

With the help of the springboard of “bringing in and going out”, Shenglong Group introduced technology, which made up for its lack of R&D capability and initially opened up foreign markets, which was conducive to the Group’s better understanding of foreign markets and advanced technologies. At the same time, Shenglong Group and PCL of India have joined forces to share their excellent technologies, realize horizontal cooperation, further enhance their technical capabilities, and accumulate rich knowledge sources, information sources, talent sources and capital sources for Shenglong Group.

In addition, under the current situation that the R&D capability is insufficient and the breakthrough cannot be achieved, the technological breakthrough can be achieved by introducing technology. However, when the enterprise has enough talents and information, it should take the initiative to improve its R&D capability, innovate its R&D technology, upgrade its core technology, and change from passive development to active development. Shenglong Group can also form cooperative relations with excellent enterprises at home and abroad, realize strong alliance, upgrade core technologies and provide strong technical support for the subsequent development of enterprises.

4.4 Build a technical team through “internal training + external introduction”

Under the background of economic globalization, if private enterprises want to develop

and grow, entrepreneurs must have a global vision and patriotism, follow the internal logic of enterprise development strategy theory, change the strategic management concept and reach a strategic management consensus on the basis of scientific and systematic analysis of the internal and external environment of enterprises. Enterprises should develop a training system for overseas talents, regularly send excellent employees to exercise and study abroad, absorb advanced international ideas and technologies, and adapt to the international business environment; in the aspect of introducing international talents, take corresponding measures actively to create a good and relaxed employment environment for outstanding talents returning from overseas study. At the same time, establish a salary mechanism that can reflect the value of international talents and create a fair competition talent selection mechanism, and strive to attract and retain talents.

For Shenglong Group, there are two ways, one is external introduction, and the other is internal training. For attracting talents from the outside, it is necessary to establish an external talent introduction system according to the reality. In this regard, enterprises can increase cooperation with universities and colleges, and train specialized talents through the strength of universities, so as to select the talents needed by enterprises. Enterprises with the same needs can carry out joint training of talents and make full use of existing resources, so as to achieve talent sharing. To train talents internally, it is necessary for enterprises to establish a virtuous circle training mechanism, continuously improve the skills of talents, and even carry out various trainings and internal exchanges with the technical research centers of cooperative companies. Secondly, put talents in the right place, invite talents to develop scientific research projects together when researching and developing projects with partners, help the company

train talents in the projects, and give full play to the maximum role of talents, so that not only talents are trained, but also the level of technical teams is improved.

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Feedback from Subsidiaries: the Impact of Motivational Diversification of Outward Foreign Direct Investment on Innovation Performance of the Parent Company

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Abstract: Whether OFDI has an effect on multinational enterprises innovation in emerging economies remains controversial. From the perspective of motivational diversification, this paper studies the impact of OFDI on the innovation performance of parent company by using China Industrial Enterprise Database from 2000 to 2013. The results show that motivational diversification of OFDI positively promotes the parent company's innovation performance. The breadth of OFDI plays a negative regulatory role, while the breadth of domestic investment positively moderates the impact. The study further deepens the research on reverse spillover effect, and provides some references for enterprises and governments to optimize the layout of investment at home and abroad and cultivate core competitive advantages.

Keywords: OFDI; Reverse Spillover Effect; Motivational Diversification; Innovation Performance; Parent Company

1. Introduction

The Uppsala provides a theoretical basis for enterprises lacking inherent advantages in internationalization to make foreign direct investment. At present, many industry cases and academic studies have also confirmed that foreign direct investment is increasingly becoming an important channel for multinational companies to enhance their innovation capability and innovation level, and thus cultivate their competitive advantages (Mao & Xu, 2014). Multinational companies to invest abroad, especially in countries or regions with high levels of innovation, can take advantage of the advantages of the host country to complement their own development, i.e. through overseas subsidiaries or branches to obtain and use resources to benefit the parent company, forming a reverse spillover effect (Wen & Yang, 2021). Since the beginning of this century, multinational companies in emerging economies are accelerating their internationalization and improving their own efficiency through reverse spillover effects. After a long period of overseas cultivation, the foreign direct investment of multinational corporations does promote the innovation performance of the parent

company, but the degree of impact is different. Figure 1 shows the number of granted invention patents, utility models and designs of enterprises with foreign investment behavior in all years after matching the database of Chinese industrial enterprises with the list of enterprises with foreign investment and the database of Chinese patents from 2000 to 2013. Although the technology content of utility model patents is slightly lower than that of invention patents, they have strong practical value. The results show that, during the sample period, the number of innovation of Chinese multinational companies has been greatly improved on the whole, especially the utility model patents, which far exceeded the design and invention patents after 2010. This shows that multinational companies are more practical than research-oriented when learning, absorbing and transforming the advanced technology of the host country. The phenomenon is not only related to the way of foreign investment and the company's own factors, but also may be related to whether the mutual coordination between subsidiaries is effective or not. In the final analysis, the mutual coordination between subsidiaries is related to the investment motivation (Lee, 2022). Investment motivation can be divided into two types: resource-seeking motivation and system-seeking motivation. One of the major motivations for foreign direct investment companies to export overseas capital is to seek the resources of the host country, including production resources, market resources and technological resources, in the hope of reducing production costs, expanding the market scale and acquiring strategic technologies, so as to improve performance (Nie, 2020). In addition to the resource-seeking motivation, some foreign direct investment also shows obvious institutional preference. Some studies think that the heterogeneity of the host country will affect the efficiency and cost of foreign direct investment companies to obtain technological resources (Ye et al., 2017), while others find that the institutional environment of the home country, including scientific and technological, financial, legal and other support, has a positive role in promoting the reverse technology spillover effect of foreign direct investment (Ruan & Li, 2018). When an enterprise arranges its subsidiaries overseas, it will choose multiple destination countries to invest, and one or more of them will also make multiple investments. These subsidiaries undertake one or more functions due to inconsistent investment motives and strategic positioning, and there is a relationship or even a competitive relationship between each other. Therefore, this paper

intends to study the impact of diversification of OFDI motives on the innovation performance of parent companies from the perspective of subsidiary strategy.

This paper explores the impact of diversification of OFDI motives on the innovation performance of the parent company, to further deepen the reverse spillover effect research, to enrich the foreign direct investment theory of emerging economies represented by China, which is different from the traditional foreign direct investment theory and to supplement the OFDI theory of emerging economies with the core of resource-based view and system-based view. Also, it is beneficial to optimize the investment distribution of multinational corporations in China at home and abroad. If we can clearly understand the coordination between subsidiaries, that is, the relationship between the motivations and innovation, then this will provide some inspiration and suggestions for enterprise investment layout. Moreover, it is conducive to smooth the flow of elements between domestic and international cycles, and provides theoretical support for further improvement of innovation policies. Multinational companies are one of the carriers connecting the two major domestic and foreign cycles. While improving their innovation capability and innovation level, enterprises will attract high-quality global sources of capital to enter the country to serve the domestic major cycle, thus accelerating the pace of building a new development pattern.

2. Theoretical Analysis and Hypotheses

2.1. The Impact of Diversification of Foreign Investment Motives

There must be certain motives for foreign investment behind the capital export behavior of multinational corporations, which may be either single motives or multiple motives. At present, most of the literatures only discuss the influence of a certain type of foreign direct investment motives on the reverse spillover effect, and few researches examine the coordination effect of different foreign direct investment motives, i.e. the effect of diversification of foreign direct investment motives. Multinational corporations affect corporate innovation through the reverse spillover effect of foreign direct investment, including the use of internal networks between parent companies and subsidiaries and subsidiaries for resource acquisition, digestion, absorption, integration and transfer activities, and

access to various opportunities through external networks with host country consumers, suppliers and competitors. However, the above effect also depends on the investment motivation. Previous studies have shown that investment motivation is also very important to the innovation of multinational companies (Piperopoulos et al., 2018). Unlike previous studies which emphasized a single investment motive, diversification of investment motives can benefit by making full use of the resources of the host country and learning various kinds of knowledge, rather than just seeking knowledge and other resources. For example, the purpose of R&D-motivated OFDI is to make full use of the research and development resources and innovation environment of the host country. Although companies can obtain relevant knowledge and other resources through reverse technology spillovers and profit from them, they may not be able to truly understand the sources of innovation and how to use them in the production process. Only by fully embedding the local production and research and development network can they truly understand, identify and effectively use the useful resources. In other words, the superposition of general production-motivated and R&D-motivated OFDI is more conducive to the improvement of enterprise innovation.

Based on this, the following assumptions are proposed:

Hypothesis 1. Diversification of foreign investment motives has a positive effect on the innovation performance of the parent company.

2.2. The Regulatory Role of Overseas Investment Layout

The most essential feature of a company's OFDI motivation is to make full use of the advantages of the host country. Different investment markets have different factor endowments. Therefore, the exertion of OFDI motivation is influenced by the company's overseas investment layout. Some studies have shown that the breadth and depth of foreign direct investment have an impact on the capital allocation ability of enterprises (Cao & Liu, 2021), and some scholars have found that it is closely related to the innovation of multinational enterprises (Huang et al., 2021). From the perspective of the breadth of foreign direct investment, it means that enterprises can access the factor endowment advantages of different markets, and diversified motives can be better embedded in different markets,

on the basis of making full use of the resources of each market. However, with the continuous improvement of breadth, the company is facing a higher "outsider disadvantage" brought by operating in different markets, and the cost of coordination and communication between subsidiaries and between the parent company and the subsidiaries has been increased. It is also unable to better identify and make use of various kinds of knowledge in the host country (Huang et al., 2021) and inhibit the diversification of foreign investment motives. Judging from the depth of foreign direct investment, although centralized operation in a few markets is beneficial for enterprises to digest and absorb relevant resources, the limited resources will limit the effect of diversification of foreign direct investment motives, which is not conducive to the complementary effect of various investment motives.

Therefore, the following assumptions are made:

Hypothesis 2. The breadth and depth of outward investment have a negative moderating effect, that is, the breadth and depth of outward investment inhibit the positive effect of diversification of outward direct investment motives on the innovation of the parent company.

2.3. The Regulatory Role of Domestic Investment Layout

Although the diversification of foreign direct investment is beneficial to the innovation of enterprises, the "disadvantage of outsiders" and the spillover effect of reverse technology are restricted by the absorption and integration ability of enterprises. When a multinational enterprise operates across regions in its home country, it means that the enterprise already has the ability to deal with problems that may arise when the market is unfamiliar, and is better at growing up in the same market with consumers, suppliers and competitors in different markets. The accumulated experience in operating in multiple markets and concentrated in a few markets in the home country can help enterprises overcome the "outsiders' disadvantages" in operating in the host country market, help enterprises to better identify the resource advantages of each market, and better coordinate the digestion, absorption, utilization and integration of resources among subsidiaries, which is beneficial to the generation of reverse spillover effects in different markets, and give full play to the diversified role of foreign direct

investment motives.

Based on this, the following assumptions are proposed:

Hypothesis 3. Both the investment breadth in domestic market and the investment depth in domestic market have positive moderating effects on the innovation performance of the parent company.

3. Empirical Analysis

3.1. Data Sources and Processing

The data in this paper are mainly derived from China Industrial Enterprise Database, List of Enterprises (Institutions) Invested Abroad and China Patent Database from 2000 to 2013. Among them, the investment directory mainly selects the year and business scope of each foreign investment of the company, and the patent database mainly selects information such as the number of applications, authorizations and cited numbers of invention patents, utility models and appearance patents of the company. In addition, the data of domestic investment layout are mainly from the website of the enterprise survey, which manually matches the foreign investment enterprises with their domestic subsidiaries. After matching and deleting the missing values, 10212 observations were retained, and a total of 7,299 parent companies made foreign direct investment.

3.2. Model

Based on the theoretical analysis, the following regression model is constructed:

$$Perform_{it} = \alpha_0 + \alpha_1 Diverse_{it} + \alpha_2 Breadth_{it} + \alpha_3 Depth_{it} + \alpha_4 Breadth\_d_{it} + \alpha_5 Depth\_d_{it} + X_{it} + \{F\} + \varepsilon_{it} \quad (1)$$

$$Perform_{it} = \alpha_0 + \alpha_1 Diverse_{it} + \alpha_2 Breadth_{it} + \alpha_3 Depth_{it} + \alpha_4 Breadth\_d_{it} + \alpha_5 Depth\_d_{it} + \alpha_6 Diverse_{it} * Breadth_{it} + \alpha_7 Diverse_{it} * Depth_{it} + \alpha_8 Diverse_{it} * Breadth\_d_{it} + \alpha_9 Diverse_{it} * Depth\_d_{it} + X_{it} + \{F\} + \varepsilon_{it} \quad (2)$$

In the above model, i and t represent the parent company and the observed year respectively, and α is the estimation parameter. $Perform_{it}$ means the performance of parent company. $Diverse_{it}$ means motivational diversification for foreign investment. $Breadth_{it}$ represents the breadth of foreign investment. $Depth_{it}$ represents depth of foreign investment. $Breath\_d_{it}$ indicates the breadth of investment in the domestic market, and $Depth\_d_{it}$ indicates the depth of investment in the domestic market. X represents control variables at the enterprise level and at the national level. F represents the model's impact on the province, industry, year and firm-level fixed effects. It is a random perturbation term.

Formula (1) mainly studies the effect of diversification of foreign investment motivation, the core explanatory variable, on the innovation performance of the parent company. If α_1 is significantly positive, it indicates that diversification of foreign investment motivation has a positive effect on the innovation performance of the parent company. Formula (2) attempts to explore the moderating effect of foreign investment layout and domestic market investment layout. Therefore, the cross-product term of the core explanatory variable and the related tuning variable is added. If the estimation parameter is significantly positive, the corresponding moderating variable has a positive moderating effect; If the estimated parameter is significantly negative, it indicates that the corresponding regulatory variable has inhibitory effect.

3.3. Variables

The dependent variable is the parent's innovation performance, which is represented by the logarithm of the sum of the stock of patent authorizations including invention patents, utility models and designs. The explanatory variable is diversification of foreign investment motives, and the binary variable is used. If the investment motives of the parent companies are all the same, the value is 0; If the parent has different investment motives, the value is 1. The basis for classifying investment motives is to use keywords to search the business scope of companies in the List of Enterprises (Institutions) with Foreign Investment, for example, those with keywords such as "production", "manufacturing",

"processing" and "assembly" are classified as production motives, those with keywords such as "research and development", "research and development", "technology development" and "material development" are classified as research and development motives, those with keywords such as "sales", "distribution", "development", "promotion" and "business expansion" are classified as market motives, and the rest are classified as other motives. Those with only one motivation are classified as not having diversified investment motivation, and the value is 0; Those with two or more motives are classified as having diversified investment motives, with a value of 1.

The control variables includes two dimensions: corporate Age and national age, which are subtracted from the observed year of the sample. Year of opening, and the value of the year of opening is 0; The Size of the company, taking the logarithm of the number of employees in the company; labor productivity, measured by the logarithm of the ratio of gross industrial output value to the number of employees; Experience, measured as the observed year less the initial year of the foreign direct investment; The proportion of State capital, i.e. the proportion of state capital in the total assets of the selected sample; Global, the average of the ratio of foreign assets to total assets (FATA) and the ratio of foreign sales to total sales (FSTS) in accordance with the method of Kafouros (Kafouros et al., 2012), i.e.（FATA+FSTS）/2； Geographical Distance, referring to the thinking of Zhang (Zhang et al., 2017), is measured by taking the logarithm of the distance between the most populous city in the country where the parent company and the corresponding subsidiary company are located.

The adjustment variables include: foreign investment layout, considering the two dimensions of Breadth and Depth of foreign investment, and referring to Huang's description (Huang et al., 2021), which is measured by the total number of foreign direct investment in the current year and the stock of average investment times in each market in the current year respectively; The domestic market investment layout, considering the two dimensions of domestic market investment breadth (Breadth_d) and domestic market investment depth (Depth_d), is measured by the total number of domestic investments made by foreign investment enterprises and the proportion of paid-in capital of domestic subsidiaries to total assets respectively.

See Table 1 for descriptive statistics of variables. The results in the table show that the number of

observed values of variables is 10212 and the standard deviation is between 0 and 10, indicating that the sample distribution tends to be centralized and the data stability is relatively good.

3.4. Baseline Regression Analysis

Table 2 reports the baseline regression results. Model 1 (i.e. Column 1, and so on) simply regresses the explained variables and explanatory variables, model 2 adds control variables on the basis of model 1, model 3 controls the firm fixed effect,model 4 controls the year, industry and company fixed effects, and model 5 controls the year, province and company fixed effects. Model 6 controls four fixed effects. Model 7 adds diversification of foreign investment motives and foreign investment on the basis of model 6 for the interaction items of capital allocation, model 8 adds the interaction items of diversification of foreign investment motives and internal investment allocation, and model 9 both external and internal investment arrangements were considered. The results of columns 1 to 7 show that the regression coefficients of the explanatory variables are significantly positive, which indicates that the diversification of foreign direct investment motivation does have a positive effect on the innovation performance of the parent company without considering the interaction between the explanatory variables and the investment layout of the domestic market, which is consistent with hypothesis 1. The explanatory variables in columns 8 and 9 are not significant but negative. This is because diversification of foreign direct investment motives may lead to the problem of dispersion or tension of research and development funds, which leads to poor convergence between domestic experience and foreign experience, and has a certain negative impact on the innovation performance of the parent company. At the same time, the regression coefficients of explanatory variables in columns 2 to 7 decreased as compared with that in column 1, indicating that there are both control variables and fixed effects.the positive impact of the diversification of ofdi motivation on the innovation performance of the parent company is weakened. The regression coefficient of explanatory variables in column 4 is a positive minimum value. By comparing column 4 with column 5, it can be seen that the effect of industry fixed effect is more obvious than that of province fixed effect, indicating that the diversification of foreign investment motivation is more susceptible to the impact of industry. Among

the control variables, the proportion of state-owned capital is not significant, which leaves room for further empirical testing. Comparing column 7 with column 9, we find that the explanatory variable of the latter is not significant and the coefficient is negative, and the moderating effect of both of them on outward investment breadth is significantly negative, indicating that the influence of diversification of outward investment motives on the innovation performance of the parent company weakens with the increase of outward investment breadth, and even may appear negative moderating instead. This result may be due to the fact that too large a range of ofdi will result in a serious disadvantage to outsiders, which will in turn hinder the innovation performance of the parent company. Comparing column 8 with column 9, the interaction coefficient of domestic market investment breadth is significantly positive at the level of 10%, which indicates that domestic market investment breadth plays a positive regulating role on the relationship between explanatory variables and explanatory variables.

3.5. Robustness Test

In this paper, two methods are mainly used in the robustness test: replacing the explained variables and eliminating specific samples. The corresponding results are reported in table 3.

First, replace the interpreted variable. Considering the controversy in the related literature about the use of patent number as an agent of innovation performance, this paper replaces the explanatory variable with the sum of the three kinds of patents (i.e. invention patents, utility models and design) cited (column 1). The results show that the method is still robust, indicating that the diversification of foreign direct investment motives has significant impact on the innovation performance of the parent company.The role of promoting. However, the result of the depth of investment in the domestic market is still not significant. The reason may be that there is heterogeneity between the domestic market and the foreign market, which makes it difficult for enterprises to apply the operating experience in the domestic market to the foreign market.

Second, remove specific samples. Previous studies generally regarded the investment destined for Hong Kong, China as a "springboard" type of investment. Based on this, the sample of investment in Hong Kong is removed for robustness test. The results of column 2 show that the explanatory

variables in the sample of non-Hong Kong regions have become insignificant for two possible reasons. One is that the sample size is still not large enough. The other is that Hong Kong, with its unique geographical advantages, policy advantages and historical advantages, has indeed facilitated many foreign direct investment enterprises to make better use of the resources of both domestic and foreign circles and has a positive role in promoting their own innovation performance.

3.6. Endogenous Treatment

In view of the fact that the model mentioned above may be endogenous due to missing variables and other factors, this paper adopts the method of adding control variables and double difference to deal with endogenous problems. In the benchmark regression, the control variable involving corporate innovation only considers the factors of the home country, ignoring the innovation factors of the host country. In this paper, the host country innovation level is added as the control variable, which is represented by the proportion of the host country's research and development expenditure to GDP. Table 4 reports the results of endogenous treatment. The results presented by both methods are significantly positive, indicating that diversification of OFDI motivation is indeed beneficial to improve the innovation performance of the parent company, which responds to the results in the benchmark regression. It is because the multiple foreign direct investments made by the parent company based on different motives can bring linkage effect, especially in the host country or region where the supporting infrastructure is more perfect, the business environment is more advantageous and the target market is more active, it can obtain more obvious reverse spillover effect, which in turn feeds back the improvement of its own innovation ability. In addition, Table 4 also shows that foreign investment breadth plays a negative moderating role in the impact of diversification of foreign investment motives on the parent company's innovation performance, while domestic market investment breadth plays a positive moderating role, which is in line with the results shown in the benchmark regression.

3.7. Heterogeneity Analysis

In the part of heterogeneity analysis, this paper arranges two situations: one is to divide the samples according to whether there is research and development motivation (Table 5, columns 1 and 2), considering that the samples with research and development motivation may be more able to improve innovation performance; Second, considering the existence The investment may be affected if the year of overseas investment is earlier than the year of incorporation, i.e. the sample with domestic operating experience less than 0.The moderating effect of the layout, therefore the sample is divided according to whether the domestic operating experience is less than 0 (columns 3 and 4). Table 5 reports Sub-sample results. The explanatory variables in column 1 and column 2 are not significant, indicating that whether a company has research and development motivation has no substantial impact on the improvement of its innovation performance. In addition, column 1 shows that the outward investment breadth is significantly negative at the level of 5%, which is basically consistent with the benchmark regression results. Column 2 The control variable of the proportion of state-owned capital is significantly negative at the level of 10%, indicating that the higher the proportion of state-owned capital in foreign direct investment companies with research and development motivation, the more unfavorable it will be to their own innovation. This result seems to contradict the views of many existing documents. The reason is that, in addition to objective factors such as sample data and measurement methods, it is also possible that there are problems such as over staffing within the companies, imbalance of input and output efficiency, etc. during the sample period. Column 3 shows that on the premise that the parent company's initial overseas investment is earlier than the domestic subsidiary company's establishment time, the coefficient of foreign investment depth is significantly positive but the coefficient of interaction with explanatory variables is negative. Considering the viewpoint of the existing literature, it shows that the foreign investment depth has inhibitory moderating effect on the company's innovation performance. Therefore, this paper explains the results as follows: first, there is a lack of good resources and experience convergence between the parent company and the domestic subsidiary company; second, the average number of corporate investments in the overseas market has not yet reached the critical value, and further intensive cultivation is required in order to better obtain the reverse spillover effect. Column 4 shows that the outward

investment breadth still plays a significant negative moderating role, and the domestic market investment breadth has a positive moderating role at the level of 10%, which is basically consistent with the benchmark regression results.

4. Conclusions

This paper mainly studies the impact of diversification of foreign direct investment on the innovation performance of parent companies based on the data of China's industrial enterprises and foreign investment directory from 2000 to 2013. Compared with the existing research, the main difference of this paper is that the diversification of foreign investment motivation is taken as the explanatory variable, rather than a single investment motivation. In addition, this paper also preliminarily explores the adjustment function of foreign investment layout and domestic investment layout. The results show that: (1) Reasonable diversification of foreign direct investment motives has a positive effect on the innovation performance of the parent company; (2) The combination of diversification motivation and R&D motivation has no substantial impact on improving the innovation performance of the foreign direct investment parent company; (3) Foreign investment breadth plays a negative moderating role in the impact of diversification of foreign direct investment motives on the parent company's innovation performance, while domestic market investment breadth plays a positive moderating role; (4) The depth of foreign investment may play an inhibitory role in the regulation, while the depth of domestic market investment has not yet shown a significant regulatory role.

Under the background of constructing a new development pattern and expanding a high level of openness, the research conclusion of this paper has certain practical significance for the investment layout of foreign investment enterprises. The main recommendations are as follows: (1) When an enterprise makes an investment abroad, it should fully consider its own conditions and external conditions. It can adopt a step-by-step approach by first investing based on one motive and then considering other motives depending on the circumstances, so as to avoid blind expansion and overweight. (2) Enterprises should actively use specific "springboards" to obtain strategic competitive advantages. Apart from Hong Kong, Hainan can also be considered. As a national key free trade port

during the "14th Five-Year Plan" period, Hainan has the characteristics of free and convenient investment and highlighting local advantages. It may become a new capital junction, especially suitable for foreign direct investment based on research and development motivation and market motivation. (3) Enterprises should pay attention to the linkage of domestic and international double circulation, especially the regional and industrial layout of domestic subsidiaries, break down the barriers existing between parent and subsidiary companies, promote the circulation of factors and improve the allocation of resources. (4) Governments at all levels should actively respond to the call of the central government, break the small cycle of free-for-all, accelerate the pace of building a unified domestic market, strengthen the establishment of fair competition market rules, clean up the local persistent ailments that hinder the unified market, attract foreign high-quality resources to serve the domestic market, and release economic vitality more effectively.

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APPENDIX

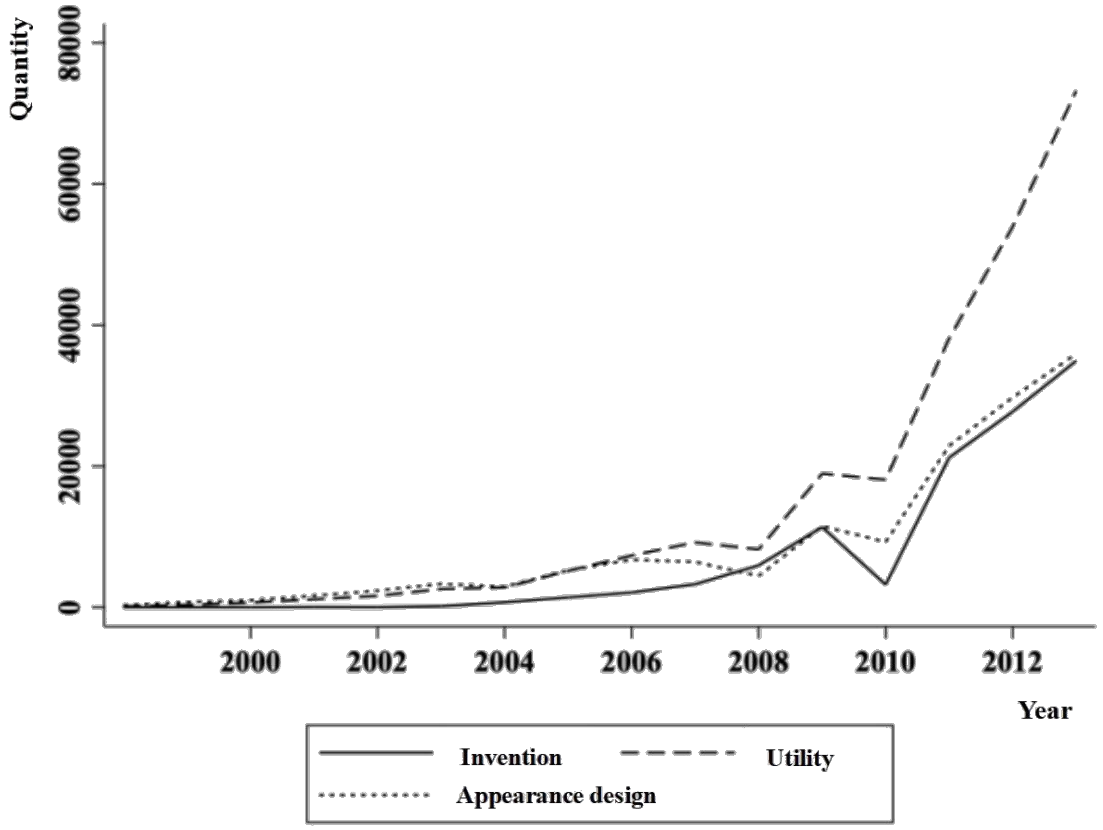

Figure 1 Changes in the Quantity of Invention Patents, Utility Models and Designs Licensed by Chinese Transnational Corporations

Table 1. Descriptive Statistics of Variables

Variable Type	Variable Name	Obs.	Mean	S.D.	Minimum	Maximum
Interpreted Variable	Innovation performance of parent company	10212	1.486	1.750	0.000	9.968
Explanatory Variable	Motivational diversification	10212	0.393	0.488	0.000	1.000
Controls	Company age	10212	12.310	8.744	0.000	61.000
	Company size	10212	6.092	1.343	2.079	12.290
	Labor productivity	10212	6.244	1.208	0.000	14.130
	Overseas operating experience	10212	2.132	2.131	0.000	25.000
	Proportion of state-owned capital	10212	0.007	0.049	0.000	1.091
	Internationalization	10212	0.215	3.553	0.000	358.500
	Geographical distance	10212	8.399	0.780	6.696	9.868
Moderators	Overseas investment breadth	10212	0.388	0.687	0.000	22.000
	Overseas investment depth	10212	0.451	0.542	0.000	4.000
	Domestic investment breadth	10212	1.966	0.620	0.693	6.804
	Domestic investment depth	10212	0.057	0.162	0.000	1.639

Table 2. The Results of Baseline Regression

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Motivational diversification	0.512***	0.332***	0.279***	0.161***	0.258***	0.166***	0.184***	-0.058	-0.036
	(0.053)	(0.050)	(0.049)	(0.044)	(0.046)	(0.044)	(0.051)	(0.135)	(0.137)
Company age		0.032***	0.026***	0.022***	0.022***	0.022***	0.022***	0.022***	0.022***
		(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Company size		0.264***	0.243***	0.231***	0.227***	0.228***	0.228***	0.228***	0.228***
		(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)
Labor productivity		0.143***	0.127***	0.131***	0.131***	0.130***	0.130***	0.130***	0.130***
		(0.017)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
Overseas operating experience		0.140***	0.142***	0.035***	0.027**	0.048***	0.051***	0.048***	0.050***
		(0.009)	(0.009)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
Proportion of state-owned capital		-0.124	-0.096	-0.057	-0.094	-0.096	-0.097	-0.097	-0.098
		(0.266)	(0.265)	(0.232)	(0.238)	(0.234)	(0.237)	(0.235)	(0.237)
Internationalization		0.004***	0.004***	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***
		(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)
Geographical distance		-0.069***	-0.060***	-0.050**	-0.024	-0.042*	-0.042*	-0.042*	-0.042*
		(0.023)	(0.023)	(0.022)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)
Overseas investment breadth		0.010	0.007	0.003	-0.008	0.003	0.047**	0.003	0.047**
		(0.012)	(0.012)	(0.013)	(0.013)	(0.013)	(0.021)	(0.013)	(0.021)
Overseas investment depth		0.010	0.010	0.006	0.015	0.007	-0.004	0.008	-0.003
		(0.019)	(0.019)	(0.019)	(0.018)	(0.019)	(0.023)	(0.019)	(0.023)
Domestic investment breadth		-0.053	-0.042	-0.010	0.003	-0.010	-0.010	-0.056	-0.054
		(0.036)	(0.036)	(0.033)	(0.034)	(0.033)	(0.033)	(0.040)	(0.040)

Table 2 (continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Domestic investment depth		0.150**	0.142**	0.083	0.093	0.084	0.085	0.074	0.076
		(0.070)	(0.069)	(0.066)	(0.066)	(0.066)	(0.066)	(0.082)	(0.082)
Motivational diversification * Overseas investment breadth							-0.069***		-0.068***
							(0.027)		(0.026)
Motivational diversification * Overseas investment depth							0.030		0.030
							(0.039)		(0.039)
Motivational diversification * Domestic investment breadth								0.117*	0.115*
								(0.069)	(0.069)
Motivational diversification * Domestic investment depth								0.035	0.031
								(0.136)	(0.136)
Year fixed effect	NO	NO	NO	YES	YES	YES	YES	YES	YES
Provincial fixed effect	NO	NO	NO	NO	YES	YES	YES	YES	YES
Industry fixed effect	NO	NO	NO	YES	NO	YES	YES	YES	YES
Firm fixed effect	NO	NO	YES	YES	YES	YES	YES	YES	YES
Constant	1.304***	-1.068***	-1.584***	-3.165***	-2.396***	-3.558***	-3.591***	-3.457***	-3.493***
	(0.033)	(0.268)	(0.289)	(0.382)	(0.371)	(0.454)	(0.458)	(0.456)	(0.461)
Within R square	0.022	0.186	0.235	0.469	0.357	0.481	0.481	0.481	0.481
Observations	10212	10212	10212	10212	10212	10212	10212	10212	10212

Table 3. Results of Robustness Test

	Replace explained variable	Eliminate specific samples
Motivational diversification	0.089***	-0.007
	(0.025)	(0.096)
Company age	0.020***	0.018***
	(0.003)	(0.004)
Company size	0.208***	0.260***
	(0.016)	(0.023)
Labor productivity	0.119***	0.157***
	(0.016)	(0.023)
Overseas operating experience	0.044***	0.046***
	(0.012)	(0.018)
Proportion of state-owned capital	0.016	0.152
	(0.218)	(0.328)
Internationalization	0.001*	0.375***
	(0.000)	(0.070)
Geographical distance	-0.038*	-0.065**
	(0.022)	(0.031)
Overseas investment breadth	0.014	0.011
	(0.015)	(0.020)
Overseas investment depth	0.001	-0.000
	(0.019)	(0.024)
Domestic investment breadth	-0.003	0.015
	(0.033)	(0.048)
Domestic investment depth	0.070	0.120
	(0.065)	(0.094)
Motivational diversification * Overseas investment breadth	-0.025**	-0.033**
	(0.012)	(0.017)
Motivational diversification * Overseas investment depth	0.018	-0.000
	(0.019)	(0.024)
Motivational diversification * Domestic investment breadth	0.076***	0.044
	(0.016)	(0.049)
Motivational diversification * Domestic investment depth	0.011	0.070
	(0.066)	(0.094)
Year fixed effect	YES	YES
Provincial fixed effect	YES	YES
Industry fixed effect	YES	YES
Firm fixed effect	YES	YES
Constant	-3.301***	-3.602***
	(0.444)	(0.574)
Within R square	0.456	0.498
Observations	10212	6256

Table 4. Results of Endogenous Treatment

	Add control variable	DID
Motivational diversification	0.201***	
	(0.049)	
Innovation level of host country	-0.046	
	(0.030)	
DID		0.277***
		(0.074)
Company age	0.023***	0.022***
	(0.003)	(0.003)
Company size	0.224***	0.224***
	(0.018)	(0.017)
Labor productivity	0.132***	0.127***
	(0.018)	(0.016)
Overseas operating experience	0.053***	0.050***
	(0.013)	(0.012)
Proportion of state-owned capital	-0.191	-0.095
	(0.281)	(0.236)
Internationalization	0.003***	0.003***
	(0.000)	(0.000)
Geographical distance	-0.048*	-0.043*
	(0.025)	(0.023)
Overseas investment breadth	0.003	0.019
	(0.015)	(0.015)
Overseas investment depth	0.008	0.009
	(0.023)	(0.019)
Domestic investment breadth	-0.007	-0.007
	(0.037)	(0.033)
Domestic investment depth	0.105	0.090
	(0.082)	(0.066)
Motivational diversification * Overseas investment breadth	-0.073**	-0.034***
	(0.031)	(0.013)
Motivational diversification * Overseas investment depth	0.051	0.015
	(0.046)	(0.019)
Motivational diversification * Domestic investment breadth	0.147*	0.059*
	(0.077)	(0.034)
Motivational diversification * Domestic investment depth	-0.115	0.017
	(0.156)	(0.066)
Year fixed effect	YES	YES
Provincial fixed effect	YES	YES
Industry fixed effect	YES	YES
Firm fixed effect	YES	YES
Constant	-3.523***	-3.518***
	(0.465)	(0.462)
Within R square	0.482	0.482
Observations	7927	10212

Table 5. Results of Sub Sample

	(1)	(2)	(3)	(4)
Motivational diversification	0.004	0.188	-2.341*	-0.020
	(0.139)	(0.839)	(1.328)	(0.131)
Company age	0.023***	0.018	0.068**	0.023***
	(0.003)	(0.013)	(0.034)	(0.003)
Company size	0.222***	0.234***	0.492***	0.229***
	(0.013)	(0.055)	(0.116)	(0.013)
Labor productivity	0.140***	0.068	0.205**	0.132***
	(0.013)	(0.045)	(0.094)	(0.012)
Overseas operating experience	0.047***	0.101***	-0.027	0.052***
	(0.009)	(0.032)	(0.076)	(0.009)
Proportion of state-owned capital	0.131	-1.165*	-8.710	-0.132
	(0.247)	(0.622)	(9.664)	(0.228)
Internationalization	0.003**	0.826***	0.194	0.003*
	(0.002)	(0.285)	(0.287)	(0.002)
Geographical distance	-0.043**	-0.066	-0.498	-0.045**
	(0.020)	(0.061)	(0.328)	(0.019)
Overseas investment breadth	0.038**	0.037	-0.152	0.051***
	(0.019)	(0.141)	(0.225)	(0.019)
Overseas investment depth	-0.004	-0.116	1.104***	-0.007
	(0.023)	(0.193)	(0.381)	(0.023)
Domestic investment breadth	-0.061	0.220	-0.316	-0.057
	(0.040)	(0.393)	(0.479)	(0.040)
Domestic investment depth	0.135*	0.141	-0.863	0.082
	(0.082)	(0.707)	(0.689)	(0.082)
Motivational diversification * Overseas investment breadth	-0.054**	-0.099	0.529*	-0.074***
	(0.023)	(0.143)	(0.278)	(0.023)
Motivational diversification * Overseas investment depth	0.004	0.147	-0.340	0.023
	(0.039)	(0.214)	(0.893)	(0.038)
Motivational diversification * Domestic investment breadth	0.098	-0.093	1.116	0.110*
	(0.068)	(0.417)	(0.727)	(0.065)
Motivational diversification * Domestic investment depth	-0.117	0.274	1.238	0.023
	(0.156)	(0.788)	(2.599)	(0.149)
Year fixed effect	YES	YES	YES	YES
Provincial fixed effect	YES	YES	YES	YES
Industry fixed effect	YES	YES	YES	YES
Firm fixed effect	YES	YES	YES	YES
Constant	-3.445***	1.842	3.565	-3.540***
	(0.743)	(3.265)	(7.267)	(0.745)
Within R square	0.490	0.577	0.973	0.482
Observations	9256	956	264	9948

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Paper Number: MS0077

Entrepreneurial Resilience: Toward the Multi-level Analysis

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Entrepreneurial Resilience: Toward the Multi-level Analysis

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Extended Abstract

In recent years, entrepreneurial resilience research has been increasing, but the lack of multi-level research seems to obstruct the further development of this field. Specifically, while research on resilience at the individual level has been progressing, research at the team and organizational levels have not been sufficiently discussed, which leads to the lack of multi-level research. In this study, based on general team-level and organizational-level resilience in management literature, we examine the conceptual definitions and measurement methods in team-level and organizational-level entrepreneurial resilience research and make suggestions for multilevel analysis in this field.

Keywords: *resilience, entrepreneurial resilience, multi-level analysis*

1. Introduction

Individual-level entrepreneurial resilience research have been reviewed and empirically studied (Hartmann, Backmann, Newman, Brykman, and Pidduck, 2022) and the concept of individual-level resilience is becoming well established. Hartmann et al. (2022) based on Williams, Gruber, Sutcliffe, Shepherd, and Zhao (2017), called it entrepreneurial psychological resilience and defined as "the process by which an entrepreneur builds and uses [his/her] capabilities endowments to interact with the environment in a way that positively adjusts and maintains functioning prior to, during, and following adversity." Through individual-level research, some researchers noted that individual-level resilience

studies require multi-level approaches (Branicki, Sullivan-Taylor, & Livschitz, 2018; Fisher, Maritz, & Lobo, 2016; Hartmann et al., 2022; Santoro, Messeni-Petruzzelli, and Del Giudice, 2021). However, research at the team and organizational levels have not been fully argued so far. If we develop it into multi-level studies, it is urgently needed to organize the factors of team-level and organizational-level resilience.

2. Literature

We review the general team-level and organizational-level resilience studies in management research to verify their definitions. As for the team level, for example, Stoverink, Kirkman, Mistry, and Rosen (2020) defined work team resilience as "a team's capacity to bounce back from an adversity-induced process loss" (bounce back is described as a return to preadversity performance level or beyond through adaptation or persistence when members work interdependently). Besides, at the organizational level, Hillmann and Guenther (2020) mentioned that organizational resilience is the ability of an organization to maintain functions and recover fast from adversity by mobilizing and accessing the resources needed. With these assumptions, we will review resilience research in the context of entrepreneurs.

3. Method and Results

We search the Web of Science and the Scopus for articles written in English by using the keyword "entrepreneur*" AND "resilien*" in their titles, abstracts, or keywords. To ensure the quality of the paper, this study only selects the samples published (or in press) in 50 journals used in the Financial Times Research Rank (https://www.ft.com/content/3405a512-5cbb-11e1-8f1f-00144feabdc0). The results of the study following the policy show that they include discussions in the natural disaster context (Boudreaux, Jha, & Escaleras, 2022; Salvato, Sargiacomo, Amore, & Minichilli, 2020), in the financial crisis context (Davidson & Gordon, 2015; Lai, Saridakis, Blackburn, & Johnstone 2016), in terms of firm profitability (Bartlett & Morse, 2021; Salvato et al., 2020) or firm size (Bartlett & Morse, 2021; Lai et al., 2016), and others.

4. Discussion

Based on the investigation of conceptual definitions and measurement methods in the above studies, a model of entrepreneurial resilience will be developed. Specifically, it is comprised of entrepreneurial psychological resilience (individual-level), entrepreneurial team resilience (team-level), and entrepreneurial firm resilience (organizational level). Then we present a model connecting these relationships with entrepreneurial (venture) success and survival. Through these processes, we will present areas that are currently still underdeveloped and make suggestions for multilevel analysis in entrepreneurial resilience research.

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Paper Number: MS0079

Performance Feedback and Firm Financialization in Emerging Markets: The Moderating Effects of Regional Financial Development Level and Industry Competition Intensity

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Performance Feedback and Firm Financialization in Emerging Markets: The Moderating Effects of Regional Financial Development Level and Industry Competition Intensity

Abstract

Using Chinese A-share non-financial listed firms from 2009 to 2017 as a sample, drawing insights from the behavioral theory of the firm, we explore the impact of performance feedback on firm financilization. We find a V-shaped relationship between aspiration performance and the degree of firm financialization. The results show that the more actual performance deviates from organizational aspiration, the higher the degree of firm financialization. Regional financial development level strengthens the V-shaped relationship between aspiration performance and firm financialization. Moreover, when firm performance is above its aspiration level, industry competition intensity strengthens the positive relationship between aspiration performance and the degree of firm financialization. Further analysis suggests that the moderating effects of regional and industrial environments depend on whether the focal firm targets social or historical aspiration.

Keywords: Firm Financialization, Performance Feedback, Regional Financial Development Level, Industry Competition Intensity1

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Paper Number: MS0081 & MS0090

How Outward FDIs Affect Income: Experience from Chinese City-regions

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How Outward FDIs Affect Income: Experience from Chinese City-Regions

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Extended Abstract

Abstract (ca. 100 words): While outward foreign direct investments (OFDIs) shift resources from a home economy to foreign destinations, increased market and resource access as well as technological and knowledge effects in return have positive impacts on the investing locations. Such effects could be especially important in developing contexts, such as that of China. Analyzing data of 285 Chinese city-regions, this paper investigates the impact of OFDIs on regional income levels. We show that foreign investment activity positively and significantly impacts regional income in the home (investing) locations, with differentiated effects depending on investment characteristics and regional absorptive capacity.

Keyword: China; emerging markets; home region investment impact; outward foreign direct investments (OFDIs); reverse investment impact

1. INTRODUCTION

Scholars have long proposed that outward foreign direct investments (OFDIs) correlate positively with the development of the host economy by creating positive impacts on the destination's productivity, employment and innovation (i.e., Aitken & Harrison, 1999). Thus far, however, few studies have explored the effects of OFDIs on the investing (home) location, measured the impact of knowledge components on these effects, and broken findings down to the regional level. There are strong arguments in recent work to suggest a positive home (investing) region effect of outward investments by facilitating skill upgrading and generating jobs, creating new markets for domestic production, as well as facilitating access to new knowledge abroad (Bathelt & Buchholz, 2019). Such investment impetus on home region development would be especially important in developing contexts as the corresponding multinational enterprises (MNEs) may not possess traditional resource-based advantages for internationalization (Cuervo-Cazurra & Ramamurti, 2014). In this study, we utilize insights from economic geography and international business, and incorporate a regional perspective focusing on city-regions to capture OFDIs' regional impacts. Using China as a case study, we propose that OFDIs positively and significantly impact regional income in the investing locations, with differentiated effects depending on investment characteristics and regional attributes.

2. CONCEPTUAL FRAMEWORK AND PROPOSITIONS

2.1. Income effects of OFDIs

In general, scholarly literatures has given limited attention to the impacts of OFDIs on the home regional economy, and there are only a few empirical studies addressing the context of developing economies. In this context, we discuss the effects of OFDIs on home region income, through employment (Dunning & Lundan, 2008), export stimulation (Herzer, 2010), and spillover and multiplier mechanisms (Buchholz, Bathelt & Cantwell, 2020). We aim to test whether OFDIs affect home region income and propose that OFDIs are positively associated with income levels at home.

2.2. Knowledge characteristics of OFDIs

The magnitude of the spillover and multiplier effects in the investing city-region may depend on a variety of investment characteristics, such as the development stage of the receiving economy

(Cantwell & Janne, 1999), the technological sophistication of the investing sector (Singh, 2007), and the motivation of the MNE (Cantwell & Mudambi, 2005). We propose that the higher the share of OFDIs that are directed to advanced economies, in advanced and knowledge-intensive industries, and characterized by knowledge-seeking motives, the larger the impact on income levels in the home (investing) city-regions.

2.3. Absorptive capacity of the home region

The expected impacts of OFDIs on income levels also depend on characteristics of the home region. To benefit from spillover effects of OFDIs, firms in the investing region need to have the capacity to assimilate the knowledge and/or technology associated with outward investments (Singh, 2007). Very low absorptive capacity prevents local firms to benefit from reverse knowledge spillovers associated with OFDIs because of the lack of sufficient competences to internalize foreign knowledge (Cohen & Levinthal, 1990). We therefore propose that the income effects of OFDIs in the home city-regions are mediated by the city-regions' level of absorptive capacity.

3. DATA AND METHODOLOGY

Our empirical analysis spans from 2003 to 2016. Our data about OFDIs comes from the fDi Markets dataset, while data on city-region attributes originates from the China City Statistical Yearbook. We employed a cross-sectional regression analysis for the time periods 2003-2009 and 2010-2016. We used the annual per-capita income in logarithmic form (*ln.Income*) at the city-region level as our dependent variable. Our independent variables include: 1) the accumulated number of OFDI projects per 10,000 residents in a city-region (*OFDIper10000*); 2) the proportion of OFDIs directed toward developed economies (*OFDIAdEconShare*); 3) the share of OFDIs that take place within advanced and knowledge-intensive industries (*OFDIAdSectorShare*); and 4) the share of OFDIs engaged in knowledge-related activities and having motives related to strategic-asset- and knowledge-seeking abroad (*OFDIKnowledgeShare*). We control for the growth rate of the gross regional product (*GRPGrowthRate*) and whether a city-region is a special economic zone or a coastal-open city-region (*SEZCoastalCities*). Lastly, we used the share of workers in high-tech and business service sectors (*HighTechBSLaborShare*) as our moderating variable to measure regional absorptive capacity.

4. RESULTS AND DISCUSSION

4.1. Main effects of OFDIs

Models (1) to (3) in Table 1 show the main results for the first cross-sectionbased on 87 city-regions and 1,255 investment projects. Model (2) includes our main OFDI variable. As expected, *OFDIper10000* is positively associated with *ln.Income* at a high significance level of 1%. This suggests that city-regions with higher OFDI activity also see higher income levels. Model (3) includes variables on investment characteristics. These variables' coefficients are insignificant, whether OFDIs were knowledge-intensive seemed to matter less in the first cross-section. Models (4) to (6) refer to the second cross-section that includes 143 city-regions and 3,067 projects. Model (5) introduces our main investment variable, which is again positive and highly significant. In Model (6), *OFDIAdSectorShare* and *OFDIKnowledgeShare* are positive at a moderate significance level of 10%, which indicates that OFDIs in advanced sectors and with knowledge-seeking motives were positively associated with home region income. Therefore, as investment activity increases, the nature of the investments becomes more important in terms of regional impacts.

4.2. Moderating role of regional absorptive capacity

In Table 2, we added the moderating variable *HighTechBSLaborShare* and compute interaction terms. In Model (1), the interaction term has a negative coefficient and is statistically insignificant. Model (2) displays the result for the interaction with *OFDIAdEconShare*. The coefficient is positive and significant at the 10% level. This indicates that city-regions with higher shares of workers in high-tech and business service sectors were likely better able to internalize knowledge and resources acquired through OFDIs in advanced economies than city-regions with a lower share of high-tech and business services. Models (5) to (8) present results for the cross-section 2010–2016. The coefficients of both interaction terms with *OFDIAdEconShare* and *OFDIAdSectorShare* in Models (6) and (7) turn out positive and moderately significant at the 10% level. Our results indicate that regional income effects were especially associated with OFDIs directed to advanced economies and advanced and knowledge-intensive sectors.

4.3. Robustness checks

To explore and test for potential endogeneity issues associated with the relationship between OFDIs

and regional income, we apply extensive robustness checks and a two-stage least square (2SLS) estimator, which support our finding that there is a positive impact of OFDIs on home city-region.

4.4. Tables

Table 1: OLS Main Results – Determinants of *ln.Income* in Chinese City-Regions for the Cross-Sections 2003-2009 and 2010-2016

Variables	*Dependent Variable: ln.Income*					
	2003-2009			*2010-2016*		
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
GRPGrowthRate	0.001	0.001	0.001	0.000	0.000	0.000
SE	0.000	0.000	0.001	0.001	0.000	0.000
p-value	0.005	0.012	0.015	0.478	0.574	0.395
SEZCoastalCities	0.240	0.196	0.175	0.225	0.158	0.158
SE	0.063	0.063	0.067	0.050	0.048	0.047
p-value	0.000	0.003	0.010	0.000	0.001	0.001
OFDIper10000		0.779	0.718		0.715	0.599
SE		0.293	0.304		0.139	0.141
p-value		0.010	0.021		0.000	0.000
OFDIAdEconShare			0.023			-0.048
SE			0.069			0.042
p-value			0.740			0.255
OFDIAdSectorShare			0.096			0.096
SE			0.078			0.052
p-value			0.222			0.069
OFDIKnowledgeShare			-0.038			0.129
SE			0.115			0.069
p-value			0.745			0.064
Constant	9.964	9.996	9.954	10.931	10.931	10.900
SE	0.117	0.113	0.125	0.090	0.082	0.081
p-value	0.000	0.000	0.000	0.000	0.000	0.000
Observations	87	87	87	143	143	143
R^2	0.202	0.265	0.280	0.127	0.267	0.317
Adjusted R^2	0.184	0.238	0.226	0.115	0.251	0.287

Note: SE stands for standard error. Data sources: National Bureau of Statistics of China (2017) and Financial Times (2017).

Table 2: OLS Interaction Results – Determinants of ln.Income in Chinese City-Regions for the Cross-Sections 2003-2009 and 2010-2016

Variables	*Dependent Variable: ln.Income*							
	2003-2009				*2010-2016*			
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*
GRPGrowthRate	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
SE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
p-value	0.036	0.040	0.022	0.020	0.135	0.105	0.098	0.122
SEZCoastalCities	0.170	0.166	0.180	0.163	0.121	0.128	0.146	0.136
SE	0.062	0.060	0.061	0.061	0.043	0.041	0.042	0.042
p-value	0.008	0.008	0.004	0.010	0.006	0.002	0.001	0.002
OFDIper10000	0.900	0.365	0.243	0.223	0.573	0.252	0.176	0.244
SE	0.854	0.287	0.316	0.304	0.293	0.134	0.145	0.149
p-value	0.295	0.207	0.444	0.465	0.052	0.062	0.227	0.103
OFDIAdEconShare	0.054	-0.305	0.045	0.038	-0.019	-0.194	-0.024	-0.024
SE	0.064	0.206	0.064	0.063	0.038	0.106	0.037	0.038
p-value	0.401	0.142	0.485	0.547	0.610	0.070	0.530	0.534
OFDIAdSectorShare	0.072	0.070	-0.105	0.078	0.081	0.093	-0.082	0.087
SE	0.072	0.070	0.205	0.071	0.046	0.046	0.103	0.046
p-value	0.316	0.321	0.611	0.272	0.081	0.045	0.429	0.063
OFDIKnowledgeShare	-0.039	-0.041	-0.053	-0.427	0.116	0.107	0.103	0.032
SE	0.106	0.104	0.106	0.284	0.061	0.061	0.061	0.140
p-value	0.716	0.695	0.616	0.136	0.060	0.079	0.092	0.820
HighTechBSLaborShare	0.031	0.001	0.019	0.015	0.023	0.009	0.014	0.019
SE	0.009	0.016	0.010	0.011	0.004	0.008	0.005	0.004
p-value	0.001	0.949	0.067	0.165	0.000	0.229	0.006	0.000
OFDIper10000 HighTechBSLaborShare*	-0.040				-0.016			
SE	0.059				0.014			
p-value	0.500				0.272			
*OFDIAdEconShare * HighTechBSLaborShare*		0.044				0.021		
SE		0.024				0.012		
p-value		0.074				0.087		
*OFDIAdSectorShare * HighTechBSLaborShare*			0.022				0.021	
SE			0.024				0.011	
p-value			0.353				0.071	
*OFDIKnowledgeShare * HighTechBSLaborShare*				0.051				0.009
SE				0.035				0.015
p-value				0.152				0.527
Constant	9.744	10.004	9.822	9.859	10.654	10.766	10.722	10.685
SE	0.131	0.174	0.132	0.134	0.082	0.095	0.083	0.082
p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Observations	87	87	87	87	143	143	143	143
R^2	0.410	0.430	0.413	0.422	0.480	0.487	0.488	0.477
Adjusted R^2	0.349	0.372	0.353	0.362	0.449	0.456	0.457	0.446

Notes: SE stands for standard error.

Data sources: National Bureau of Statistics of China (2017) and Financial Times (2017).

5. CONCLUSION

Through an analysis of two cross-sections, we provide evidence of an association between OFDI activity and regional income levels. Although conventional views see OFDIs as shifting resources and production away from home locations, our study suggests that a positive association exists between OFDIs and home development – not just at the country but even at the city-region level.

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Research on the Dynamic Integration Mechanism of " Niche Winners " Marketing and R&D: A Longitudinal Case Study of Cixing

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Research on the dynamic integration mechanism of " niche winners " marketing and R&D: A longitudinal case study of Cixing

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1、 Introduction

The Ministry of Industry and Information Technology started to select and certify the "single champion" in 2016, and the "small giant specializing in special and new" enterprises in 2018. These two types of enterprises focus on the subdivided field, and have won the championship position in this subdivided field. Therefore, Li Ping (2021) collectively referred to China's "single champion" and "small giant specializing in special and new" as "niche winners". These enterprises have long been deeply engaged in market segmentation, with strong innovation strength, high market share, and mastery of core technology. They are at the key link of the industrial chain and supply chain, and play an important supporting role in supplementing the chain and strengthening the chain, solving the "bottleneck" dilemma, and promoting the "double cycle". They have become the key carriers and important components of implementing the national innovation driven development strategy.

Hidden champion is similar to the concept of "niche winners", which was first proposed by Herman Simon in 1996. Overseas research on invisible champions started early, and has analyzed the growth path of invisible champions from the perspectives of internationalization, innovation, human resource management and corporate culture (Garaus et al., 2016; Audretsch et al., 2018). Although both "Niche winners" and "Invisible Champion" have focused on market segmentation and won the championship position, "Niche winners" has obvious Chinese characteristics, and its growth path is quite different from that of enterprises in developed countries such as Germany. "Niche winnerss" were born in developing countries such as China, and most of them are latecomers, naturally facing technological and market disadvantages (Hobday et al., 2004). At the same time, the "niche winners" often benefits from the huge local market at the initial stage of its growth, which is obviously different from the German invisible champion who attaches great importance to internationalization at the beginning of its growth. However, the domestic research on "Niche winners" is still at the initial stage, lacking the growth path of "Niche winners" from the Chinese

context.

A key reason for the success of "Niche winners" is that it has achieved a dynamic balance between marketing and R&D. Li Ping (2021) pointed out that the "T-type strategy" is the most important underlying logic of "Niche winners". "Niche winners" not only attaches importance to professional cultivation, but also continuously deepens the core competitiveness dominated by technology (R&D) ability, and gives consideration to cross-border expansion, and constantly expands the core competitiveness dominated by market (marketing) ability. Both marketing and R&D are indispensable. The benign interaction between the two ultimately enables "Niche winners" to achieve an organic balance between leading technical expertise and diversified market applications. However, the existing research has not yet paid attention to the importance of marketing and R&D to the growth of "niche winners", nor has it explored the growth path of "niche winners" from the perspective of dynamic integration of marketing and R&D.

Therefore, the research question of this paper is: How does "Niche winners" obtain the champion position in the market segment through the dynamic integration of marketing and R&D? What is the process mechanism? This paper takes Ningbo Cixing Co., Ltd. (hereinafter referred to as "Cixing"), a Chinese private manufacturing enterprise in the global leading position in the flat knitting machine industry, as an example, and explores the process and mechanism of "Niche winners" to achieve dynamic integration of marketing and R&D in the development process through the vertical case study method.

2、 Literature review

2.1 Research on the Growth of "Niche winners"

Herman Simon put forward the concept of invisible champion in 1996 (Simon, 1996), specifically referring to small and medium-sized enterprises that are absolutely leading in a certain segment but have no brand reputation. Li Ping (2021), in combination with China's situation, called the "single champion" and "small giant specializing in new products" enterprises vigorously developed by the Chinese government as "Niche winners", and pointed out that although both "Niche winners" and Germany's invisible champion have achieved a leading position in the subdivided fields, the former no longer emphasizes the "invisible" feature but expands relevant fields on the basis of core business.

The existing research on "Niche winners" systematically analyzes the success factors of "Niche

winners" enterprises from the perspectives of R&D mode, entrepreneurial ability, environmental turbulence, internationalization and human resource management (Garaus et al., 2016; Audretsch et al., 2018; Yu Bin et al., 2022; Ge Baoshan and Zhao Liyi, 2021). Fortunately, some scholars have conducted research on the growth process and mechanism of "Niche winners" enterprises. Yu Bin et al, It is found that enterprises have mainly experienced a dynamic diversified R&D mode of "industry university research cooperation in the initial stage as the leading, external enterprise cooperative R&D as the supplement, independent R&D difficult to start → industry university research cooperation in the growth stage as the foundation, independent R&D as the leading, external enterprise cooperative R&D as the supplement → industry university research cooperation in the mature stage as the guide, independent R&D as the leading, and external enterprise cooperative R&D as the supplement".

During the whole development process of "Niche winners" enterprises, how to make strategic adjustment according to environmental changes is the focus of current scholars (Ge Baoshan and Wang Zhiguo, 2020). Ge Baoshan and Zhao Liyi (2022; Focusing on market segments, being professional, refined and deep, and persistently implementing the "Jingyi" strategy will help enterprises form core competitiveness. However, the "niche winners" in emerging market economies is different from the invisible champion enterprises in developed countries. The former is usually the latecomer in this segment and faces double disadvantages in market and technology. Hobday et al. On the basis of this study, Figueiredo and Piana (2021) identified three technology learning strategies for latecomers to respond to the opportunity window: (1) Imitative strategies: learning and innovation capability building activities are to implement minor improvements in existing technologies and new innovation activities of enterprises; (2) Defensive strategy: learning and innovation capability building activities are designed to quickly follow the global technology leaders through technological innovation. Innovation activities change from relatively complex to more complex domestic innovation; (3) Offensive strategy: learning and capability building activities are aimed at achieving leading market and technological position through R&D and engineering based innovation activities, internationalization and technological diversification.

In general, the existing research on "Niche winners" is still in the initial stage, ignoring the unique catching up situation faced by Chinese "Niche winners" enterprises. At the same time, the existing research focuses on the technology and R&D capabilities of "Niche winners", and lacks the

research on the growth path of "Niche winners" from the perspective of technology and market dynamic integration.

2.2 Interaction between marketing and R&D

Marketing can help enterprises gain insight into customers' unsolved problems and potential needs, evaluate their reactions to product concepts and functions, and help R&D engineers generate and evaluate new product ideas. R&D covers the planning and development of new products, which can meet the needs of consumers and improve the marketing ability of enterprises by improving existing products or solving problems with existing business methods (Davcik et al., 2021). Companies that successfully integrate marketing and R&D can effectively analyze customers' needs and intentions, develop new products according to market demand, and achieve excellent enterprise performance (Griffin and Hauser, 1996).

On the market/marketing side, Narver et al. (2004) proposed two types of market orientation, namely, responsive market orientation and forward-looking market orientation. Responsive market orientation focuses on the needs that customers have put forward and the development trends that competitors have shown, and timely meets customer needs. Prospective market orientation focuses on the potential needs that customers have not put forward and the dynamics of competitors to explore the development of new products and services. Audretsch et al. (2018) further pointed out that invisible champions are responsive market oriented in the product opportunity development stage and forward-looking market oriented in the market opportunity development stage. On the technology/R&D side, Jensen et al. (2007) identified two technology learning modes adopted by enterprises, namely, experience based learning (Doing, Using, Interacting, referred to as DUI learning) and science based learning (Science, Technology, Innovation, referred to as STI learning). DUI learning takes empirical knowledge and technology as the main source of innovation, while STI learning takes scientific knowledge and technology as the main source of innovation. According to the research, the technology learning of "Niche winners" has experienced a transformation from DUI learning to STI learning.

The interaction between marketing and R&D has also been partially studied in the existing literature. Hempelmann and Engelen (2015) found that in the process of new product development, the information exchange between marketing and R&D is different at different development stages, such as early (idea generation, concept development, business evaluation) and late (prototype

development, process design, production and market introduction) stages. Therefore, the information exchange between early marketing and R&D includes customer preference and product demand, potential customer behavior and potential competitor behavior. Information exchange between later marketing and R&D includes product characteristics and technical attributes, product test and customer test results, marketing and marketing strategies. Song and Song (2010) identified four key components of marketing and R&D integration: joint problem solving, relationship building, information and knowledge sharing, and collaborative communication.

However, the existing research has not yet paid attention to the interaction process between marketing and R&D of "Niche winners" enterprises, nor has it revealed how "Niche winners" has become the internal mechanism of industry leading enterprises through the interaction between marketing and R&D. But in fact, the benign interaction between marketing and R&D is particularly important for the development of "Niche winners" enterprises. Herman Simon (2015) believes that one of the unique features of invisible champions is that they successfully combine technology orientation with market orientation. After Li Ping (2021) introduced the dynamic perspective into the study of "Niche winners", he found that technology and market are mutually leveraged and interdependent, and the positive interaction between them can summarize the whole process of enterprise dynamic development. The study also points out that the underlying logic of "Niche winners" is "T-strategy", whose core feature is to focus on both professional deepening and cross-border expansion. The vertical dimension of "T-type strategy" (T-type and vertical) is the core competitiveness dominated by technical capabilities, representing the enterprise's continuous deep cultivation and focus on technical expertise; The horizontal dimension (T-type and horizontal) is the core competitiveness dominated by market capacity, representing the enterprise's continuous expansion of its diversified market application scenarios. "Niche winners" emphasizes the integration of two dimensions, attaches importance to the cooperation between internal departments, and the R&D department is closely connected with the production and sales departments. All parties jointly promote the new product development of the R&D department through information sharing (Din et al., 2013; Herman Simon, 2015).

3、 Research methods

3.1 Case Selection

The research question of this paper is about "how", and case studies are just suitable for

answering "how" and "why" questions (Eisenhardt, 1989). The vertical single case study can show the process of phenomenon changing with time, which is conducive to improving the depth of research. Therefore, this paper selects the vertical single case study method (Yin, 2014). The sample selection requirements for a single case are both extreme and enlightening. This paper chooses the story of Cixing becoming a single champion and a specialized new enterprise in the flat knitting machine field as the case study object, mainly considering the following two points:

First, the object of this study is "refined winner", so the case company must be a single champion or a specialized new enterprise. At the end of 2017, Cixing was awarded the title of "National Single Champion Demonstration Enterprise in Manufacturing Industry", and was awarded the title of "Small Giant" in the same year, which fits the research situation required by this paper.

Second, the core issue of this study is the interaction between marketing and R&D, so the case enterprises are required to have rich and in-depth interaction between marketing and R&D. The flat knitting machine industry in which Cixing belongs belongs to the special equipment industry for assembly. The innovation direction of the product is closely related to the customer demand. It is necessary to timely feed back the information obtained from the marketing side to the R&D side. At the same time, the R&D of new products will adjust the selection of R&D strategies, so it responds well to the research questions in this paper.

3.2 Data collection

This study focuses on the acquisition of primary and secondary data. During many field surveys and in-depth interviews, this study used observation, semi-structured interviews, archives and literature to obtain data.

（1）Semi structured interview

Since 2019, researchers have focused on the catching up process of Cixing, focusing on the process of marketing and R&D interaction of Cixing from 2003 to 2021. Focusing on corporate strategy, marketing strategy, R&D strategy, technological change, new product development and other topics, they have conducted 30 face-to-face interviews with corporate executives such as Cixing Chairman, Vice President of Sales, and Technical Director. The interview was recorded for about 2055 minutes and transcribed about 419000 words,.For the purpose of theoretical research, with the permission of the interviewees, the research team recorded each interview, and converted

and reorganized the recordings within 24 hours after the interview.

（2）Archives

There are two main sources of archive documents: one is to collect 21 copies of Cixing's prospectus, semi annual report and annual report since its listing in 2012 through website or WIND database retrieval; Second, through consulting the company's internal publications, such as Cixing · Happy Homeland, which is published annually by Cixing, we extracted information about the company's internal important activities and technical achievements.

（3）Literature

The literature materials were mainly obtained from three channels: first, 97 relevant literatures were searched in the Chinese Journal Full text Database and the Chinese Patent Full text Database with keywords such as "Cixing", "computerized flat knitting machine" and "knitting industry"; Second, 102 articles related to enterprises and industries were collected by visiting Cixing official website, enterprise official account and website of textile machinery industry association; Third, through Google, Baidu and other search engines to supplement information about Cixing and the latest industry trends, we collected 67 news reports of Cixing from 2003 to 2021.

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制度逃离还是安土重迁？民营企业家地位感知与企业国际化水平

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制度逃离还是安土重迁？民营企业家地位感知与企业国际化水平

摘要：管理者认知是影响企业国际化战略的重要影响因素，然而鲜有文献关注企业家地位感知如何影响企业国际化水平。结合管理者认知视角和制度理论，本研究提出高地位感知能够提升民营企业家应对外部环境不确定性和风险的信心，从而提升企业国际化水平；正式制度和非正式制度环境差异性地调节地位感知的影响。利用全国私营企业抽样调查数据，本文发现：第一，民营企业家地位感知越高，企业国际化水平越高；第二，在市场化水平低的地区，民营企业家地位感知与企业国际化程度的正向关系更强；第三，在宗族文化浓厚的地区，民营企业家地位感知与企业国际化程度的正向关系则被削弱。本研究揭示了民营企业家地位感知影响企业国际化水平的内在机制及其边界条件，也为更好地引导企业家精神驱动企业高水平“走出去”提供了实践参考。

关键词：企业家地位感知；企业国际化；宗族文化；制度逃离

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The Effect of COVID-19 Uncertainty on Chinese Entrepreneurs' Overconfidence

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The Effect of COVID-19 Uncertainty on Chinese Entrepreneurs' Overconfidence

1. Introduction

The COVID-19 pandemic has destabilised business environment and created uncertainty for entrepreneurs. In the face of crises, how entrepreneurs deal with tremendous uncertainty is an important question. For instance, whether they will close their business or persist and whether they will open new business are all important issues with significant economic implications. Although entrepreneurs are meant to deal with uncertainty in normal times, the knowledge gleaned about how they do it maybe overturn by the radical change in the market and customer volatility, unpredictable policy changes, and radical social and technological changes during crises, posting a limit to the generalizability of established theories (Klein, 2020). Therefore, it is crucial to study how the uncertainty imposed by crises like the COVID-19 pandemic shapes the judgment of entrepreneurs, which holds important implications for their decisions and economic activities during the crises. This study will examine how the environmental uncertainty in crises situations, such as the pandemic, influences the overconfidence of entrepreneurs, which further shapes their business decisions. An important feature of entrepreneurial judgment in dealing with uncertainty is overconfidence. Overconfidence is an overestimation of one's certainty regarding one's knowledge about current "facts" (i.e., information), which reflects the failure to know the limits of one's knowledge (Simon et al. 2000). Because entrepreneurship requires significant risk-taking, entrepreneurs tend to show more overconfidence and over-optimism than non-entrepreneurs (Busenitz and Barney, 1997; Grichnik, 2008). Overconfidence has wide-ranging implications for entrepreneurial decisions and outcomes. Overconfidence is positively associated with the decision to start a new venture despite the high chances of failure (Robinson & Marino, 2015). However, overconfidence leads entrepreneurs to underestimate the risks associated with new businesses and leads to more business failure (Camerer and Lovallo, 1999; Gudmundsson & Lechner, 2013; Singh, 2020). Therefore, it is important to understand how the uncertainty caused by crises influences the overconfidence of entrepreneurs and how it further shapes their business decisions.

2. Literature and framework

A motivated account of overconfidence suggests that overconfidence results from a desire to view oneself as a competent or accurate perceiver (Blanton *et al.*, 2001). Thus, uncertainty increases cognitive dissonance and the increased motive to feel confident about one's judgement, though this confidence has nothing to do with increased accuracy, resulting in overconfidence. The account is consistent with the hubris theory of overconfidence in the entrepreneurship literature, which proposes that environmental uncertainty in terms of complexity and dynamics leads entrepreneurs to overestimate the applicability of their experience and increases overconfidence (Hayward, Shepherd, & Griffin, 2006). However, empirical research based on this theory has generated mixed findings. On the one hand, Moore and Cain (2007) indicated that the ease of the task during market entry increases overconfidence, leading to a negative effect of uncertainty. On the other hand, Simon and Shrader (2012) found that whereas environmental hostility in competition increases overconfidence, environmental dynamics reduce overconfidence. Therefore, previous research has generated conflicting findings about how environmental uncertainty influences overconfidence, and it is unclear how the environmental uncertainty castigated by crises like the pandemic affects entrepreneurs' overconfidence.

In this study, we aim to investigate how the uncertain environment during the COVID-19 crisis influences entrepreneurs' overconfidence. To examine this, we will manipulate the uncertainty respondents experience through the COVID-19 scenarios, and participants will be randomly assigned to one of three scenarios (uncertain, certain and positive, or certain and negative). We will measure overconfidence in two ways—one reflecting their cognitive miscalculation (miscalibration) and the other reflecting their self-perception (better-than-average beliefs). This makes it possible to measure whether entrepreneurs show overconfidence in cognition and motivation when facing uncertainty in an entrepreneurial setting.

Overconfidence (Miscalibration)

In a calibration experiment, respondents answered general knowledge questions and indicated how confident they were that each answer was correct. Calibration was assessed by comparing the correctness rate of the responses with the mean confidence that participants had in their responses to those questions. Based on the above analysis, multiple-choice question format was implemented. This

test format, adopted by Forbes (2005) and Michailova (2010), is more straightforward for the subjects due to its simplicity and is inherently less inclined to extreme levels of overconfidence. The COVID-19 epidemic has created an uncertain life and business environment. It is suggested that entrepreneurs exhibit overconfidence to face this uncertain environment, tending to overestimate their skills, which stem from being unaware of the limitations of their knowledge, i.e., overestimating the accuracy of their knowledge. We, therefore, propose the following hypotheses.

Hypothesis 1: Entrepreneurs exhibit higher levels of overconfidence (miscalibration) in uncertain than in certain situations.

Better-than-average (BTA) Beliefs

BTA beliefs compare individual performance to a group-level statistic, and are very widely used in overconfidence research. For instance, Cooper, Woo and Dunkelberg (1988) and Grichnik (2008) asked subjects to identify the odds of the long-term success of their business and any business like theirs. The bias score was measured with the difference along an 11-point scale (0 out of 10 to 10 out of 10). We suggest that entrepreneurs exhibit overconfidence to cope with uncertainty generated by the crisis that is beyond their control, tending to overestimate their prospects for success and the likelihood of positive outcomes. Thus, hypothesis 2 is as follows.

Hypothesis 2: Entrepreneurs exhibit higher levels of overconfidence (BTA beliefs) in uncertain than in certain situations.

3. Method and results

Sample

We conducted an online experiment with 131 entrepreneurs from the Greater China region. Entrepreneurs were defined as having started or been operating an independent start-up with no ties to an established business (i.e., not a subsidiary or division). After excluding the 25 unqualified responses, the final sample size was 106 Chinese entrepreneurs (76 male, 29 female, 1 preferred not to disclose gender; age: M =36, SD=11.64).

Procedure

The participants were instructed to finish a reading comprehension task and were randomly assigned to read one of three scenarios about the current situation of COVID-19 (uncertain, certain and

positive, certain and negative). The scenarios described the current situation of the pandemic and its impact on global business and local environment, as well as government measures. The scenarios were described using the latest sources from the World Health Organization and other authoritative sources. The scenarios covered the same issues and only varied in terms of the tones describing each issue, with some highlighting the uncertain consequences while others giving definite predictions about how the situation would develop (in either positive or negative directions). After reading the scenarios, we asked open-ended questions to help participants connect the scenarios to their real-life experiences: "Based on what you have read, what are some of the things that are (un)certain for you based on your real-life and work experience?" Then participants completed questions of manipulation checks and measures of overconfidence.

Measures

Miscalibration was measured by the general knowledge questionnaire (Lichtenstein and Fischhoff, 1977; Busenitz and Barney, 1997; 1992), in which subjects answered 12 general knowledge questions (e.g., "What is the distance (in kilometres) between Taipei and Shanghai? A. 489, B.589, C.689.") and then indicated their confidence in the correctness of the answer (from 30% to 100%). The overconfidence score is the difference between the average confidence ratings and the percentage of correct answers for all the questions. Better-than-average (BTA) beliefs were measured by the entrepreneurs' perception of their company's probabilities of going bankrupt within six months (reverse-coded), sales growth in the coming year, and long-term success compared to their perceived probabilities about other companies similar to theirs (Cooper, Woo and Dunkelberg, 1988; Grichnik, 2008).

Manipulation Checks

The considerable difference between our uncertain and certain COVID-19 scenarios exhibited in the manipulation checks shows that subjects can experience (un)certainty from the contextual narratives and respond accordingly. Perceived uncertainty of pandemic situation ($F(2, 103) = 14.64$, $p < .001$) and perceived uncertainty of economic recovery ($F(2, 103) = 15.91$, $p < .001$) both were higher in the uncertain scenario than the two certain scenarios ($p < .001$ for both), while the two certain scenarios, whether positive or negative, showed no significant difference in uncertainty ($p = .52$, p

= .79 separately). The third manipulation check of perceived favorability of the situation (1 = highly favourable and 7 = highly unfavourable) also differed between scenarios significantly ($F(2, 103) = 7.88$, $p < .001$). In line with our expectations, the certain and positive scenario was perceived more favourable than the uncertain scenario ($p = .03$) and the certain and negative scenario ($p < .001$), while the difference between the latter two scenarios were non-significant ($p = .06$).

Results

In the study, entrepreneurs presented a higher overconfidence score in the uncertain scenario ($M = 26.97$, $SD = 3.46$) than in the certain and positive ($M = 10.77$, $SD = 4.01$; $p = .003$) or certain and negative ($M = 14.27$, $SD = 4.18$; $p = .02$) scenarios. The statistics in our study indicate support for Hypothesis 1. Furthermore, there is no significant difference between certain and positive and certain and negative scenarios ($p = .53$). This indicates that in the three scenarios we provided, only (un)certainty affects the entrepreneurs' overconfidence, while the valence in a certain setting has no significant effect.

Hypothesis 2 proposed that entrepreneurs would demonstrate greater overconfidence (BTA belief) in uncertainty than in certainty. The dependent variable was overconfidence (BTA belief) score, a continuous variable that represented the average difference in their perceived probability of short-term failure and long-term success of their company and other companies similar to theirs. These three difference scores showed good reliability ($\alpha = .84$), thus overconfident (BTA Beliefs) score was calculated based on the average of the three difference scores. The statistics indicate support for Hypothesis 2, showing that entrepreneurs presented a higher overconfidence in the uncertain scenario ($M = 17.54$, $SD = 2.79$) than in the certain and positive ($M = 1.43$, $SD = 3.33$; $p < .001$) and certain and negative ($M = 5.35$, $SD = 4.03$; $p = .012$) scenarios.

4. Discussion

Our results provide significant evidence that uncertainty has a crucial impact on entrepreneurs' overconfidence. We found that there is a positive effect of uncertainty on overconfidence both in terms of cognitive miscalibration and better-than-average beliefs. Overall, our study indicates that Chinese entrepreneurs may be overconfident in the face of uncertainty. Our evidence complements the experimental findings of Blanton *et al.* (2001), which suggests that overconfidence reflects the

motivation to perceive oneself as a knowledgeable perceiver. We further show that environmental uncertainty faced by entrepreneurs activates that motive and leads to their overconfidence. Because entrepreneurs have to make decisions under the uncertainty that is beyond their control, this dissonance pressures them to boost their confidence level to cope with the situation. Furthermore, since the unpredictability of the environment does not provide objective information for entrepreneurs to gauge their judgement, they may find it harder to debias their overconfidence.

Theoretical contribution

The results of this study also have various implications for the understanding of why entrepreneurs show overconfidence in uncertain situations. Despite the two definitions of overconfidence, no significant correlation has been found between better-than-average (BTA) beliefs and miscalibration. However, with two comprehensive overconfidence measures, we found that Chinese entrepreneurs exhibited higher BTA beliefs and miscalibration in an uncertain environment. In addition, we show that overconfidence is not caused by the favorability of the environment, which may be associated with uncertainty as more uncertain environment can be perceived more negative. We found that uncertain situation elicits more overconfidence than both the positive and negative certain situations. It indicates that the effect of uncertainty on overconfidence is due to the lack of information and hence inability to calibrate one's judgement.

Managerial implication

Entrepreneurial decisions are largely based on perceptions, and the cognitive mechanisms we have discussed lead to overconfidence. Entrepreneurs likely overestimate their control over events. Therefore, uncertain environments may lead entrepreneurs to act on overconfident self-perception, leading to uncalculated business decisions and preparing for failure. Motivation to increase confidence may diminish if one has the opportunity to reduce the importance of feeling knowledgeable or competent in the first place. On the other hand, it is suggested that overconfidence is a necessary part of being entrepreneurs and even humans. The business environment during crises is uncertain and precarious, which precipitates entrepreneurs to develop overconfidence in their ability to deal with crises. Our findings suggest that policy makers should design policy measures to reduce the uncertainty that are relevant for new ventures and help entrepreneurs better cope with the crises.

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The Impact of Long-term Orientation on the Resilience of Niche Leaders: Evidence from China

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The Impact of Long-term Orientation on the Resilience of Niche Leaders: Evidence from China

Abstract: Niche leaders have shown strong organizational resilience in an environment with high variability, uncertainty, complexity, and ambiguity, which plays an indispensable role in maintaining the stability of the global value chain and the sustainable development of the global economy. This study aims to explore the antecedence of organizational resilience of niche leaders from the perspective of managers' temporal orientation. Drawing on upper echelon theory, we develop and empirically test a theoretical framework that explains the effect of long-term orientation of the niche leaders on organizational resilience, as well as explores the moderating role of niche leaders' strategy deviance, stakeholder relationship, and industry structure. By using a sample of China's publicly listed niche leaders, we find that the long-term orientation of niche leaders has a positive impact on organizational resilience development. We also find that deviant strategy and industry concentration have positive moderating effects on the relationship between long-term orientation and organizational resilience, while supplier dependency has a negative moderating effect on that relationship. This study contributes to research on the growth of niche leaders by focusing on their organizational resilience and also extends the resilience literature by exploring its micro-level factors and relevant contexts.

Keywords: niche leaders; organizational resilience; long-term orientation

1. Introduction

The emergency of niche leaders or hidden champions around the world plays an increasingly important role in promoting the development of global technology and the economy, which attracts the interest of practitioners and researchers. Such firms usually focus on a narrow market niche, and accumulate and deploy relevant core resources and competence to gain the top position in that market niche (Simon, 1992, 1996, 2009, 2018). These firms are specialized technical experts with great technical superiority and market power in a particular field (Schenkenhofer, 2022), which act as indispensable roles and occupy important positions in the global supply chain. Many international giants, like Apple and Tesla, deeply rely on niche leaders around the world to build up their supply chain advantages. In particular, these niche leaders have shown strong resilience in the turbulent and complex global environment, even suffering shocks and

crises like COVID-19 prevalence and geopolitical conflicts. In China, for instance, "specialized, advanced, differentiated, and innovative" (SADI) firms (similar to "hidden champions" in Germany) are key actors implementing the national strategy enabling a transformation from "Made in China" to "Create in China". Despite the impact of COVID-19 and the trade friction between China and the US, 94.99% of niche leaders in China remained profitable, but the other listed manufacturing enterprises decreased from 93.6% in 2016 to only 86.25% in 2020 (Wu & Shi, 2022). The resilience of niche leaders contributes to the quality and stability of the global supply chain and thereby facilitates the world economy development. Hence, it is undoubtedly critical to understand how niche leaders could achieve sustainable development, particularly remain resilient in a world described as variability, uncertainty, complexity, and ambiguity (VUCA).

Organizational resilience refers to the ability to bounce back or recover from an unfavorable situation (DesJardine et al., 2019; Hillmann & Guenther, 2021; Li, 2020; Li & Zhu, 2021). The extant literature has explored several antecedents of organizational resilience from the perspectives of resources (Acquaah et al., 2011; Gittell et al., 2006; Lengnick-Hall & Beck, 2005; Gunasekaran et al., 2011) and capabilities (Burnard & Bhamra, 2011; Richtnér & Löfsten, 2014; McCann & Selsky, 2012).Internal and external firm-specific resources, like technology, knowledge, and stakeholder relationships, have essential impacts on improving organizational resilience (Acquaah et al., 2011; Gittell et al., 2006; Gunasekaran et al., 2011; Lengnick-Hall & Beck, 2005). Besides, the capabilities that learning a firm's behavior and circumstances and allocating and integrating internal and external resources in response to the dynamic environment also motivate firms to achieve organizational resilience (Burnard & Bhamra, 2011). Scholars suggest that firms which want to keep resilient outcomes should adjust their strategic activities quickly, and develop adaptive capability to respond to the changed environment conditions timely and effectively (Burnard & Bhamra, 2011).

These adaptive processes and resource deployment activities for flexibly responding to external shocks reflect the managers' temporal orientation towards short-term strategic decision-making and behavior. To face the dynamic markets, they might seize the opportunities in front of them and move into new competitive positions through using a path-breaking strategic change in the short period (Teece et al., 1997; Karim & Mitchell, 2000). This temporal orientation is one of significant factors related

to managers that might influence the strategic decision-making process and activities of firms (Desjardine & Shi, 2021; Gamache & McNamara, 2019; Zimbardo & Boyd, 2015), and eventually affect the sustainable competitive advantages formation in the VUCA environment. For niche leaders, however, they always have long-term strategic planning and keep their eyes on the future. Niche leaders always persist in focusing on a particular market niche and keep developing their technologies and processes around a field in a long period, even facing greatly dynamic and uncertain environment. Scholars from the capabilities perspective have suggest that the development of competence to achieve congruence with the dynamic environment is path-dependent in a long run (Teece et al., 1997; Eisenhardt & Martin, 2000). Some researchers have proven that a focus on short-term benefits and a lack of long-run strategic planning would limit the firms' ability of effective response to changes in the market (Antony et al., 2008; Burnard & Bhanmra, 2011). Thus, long-term orientation has become one of specific features of niche leaders, which might act as a key driver of their organizational resilience development.

Long-term orientation is defined as the manager's preference for the future (Brigham et al., 2014; Lin et al., 2019; Lumpkin & Brigham, 2011). Prior studies suggest that long-term orientation of the firm is positively related to trustful relationships formation (Ganesan, 1994), innovation development (Lin et al., 2019), corporate social responsibility establishment (Wang & Bansal, 2012) and financial performance improvement (Nadkarni et al., 2016). However, we still have little knowledge about the effect of long-term orientation on the niche leaders' organizational resilience. In this study, we draw on the upper echelon theory (Hambrick, 2007; Hambrick & Mason, 1984) to examine how the long-term orientation of the niche leaders' top management team has an impact on the organizational resilience. We suggest that niche leaders with long-term orientation would have stronger innovation and more stable external stakeholders relationships and internal human resources, which then enables them to improve organizational resilience in the VUCA environment.

Additionally, extant research highlights that the effect of temporal orientation might be shaped by the characteristics of the firms and the characteristics of the industry the firms belong to (Lin et al., 2019; Nadkarni et al., 2016; Souder et al., 2016). Competitive strategy is one of characteristics of niche leaders. Differentiation strategy is a kind of generic strategy that niche leaders take for achieving competitive

advantages in an industry (Porter, 1980; Rant, 2017). The differentiation strategy of a niche leader might affect the stakeholders' decision about transaction with the niche leader, and the resource accumulation and allocation of the niche leader its own. So, the effect of long-term orientation on organizational resilience might varies with the different differentiation strategies taken by the niche leaders. The supplier relationship, a kind of critical stakeholder relationship, is another important characteristic of niche leaders because their steady increase in performance largely depends on the stability of suppliers especially in the VUCA environment (Santa & Kekenovski, 2013; Simon, 2018, 2020; Táborecká-Petrovičová et al., 2013). The dependency of suppliers reflects the supply chain disruption risk, which might affect the relationship between niche leaders' long-term orientation and their organizational resilience. Besides, whether niche leaders with long-term orientation can achieve strong organizational resilience might be also influenced by the industry structure, especially the centralization of the industry. Because the industry centralization might shape the strategic decision and activities of the niche leaders (Porter, 1985), which thus affect the firms' internal human resources deployment and innovation development. Exploring the internal and external contextual factors would enhance our knowledge about the influential mechanism between niche leaders' long-term orientation and their organizational resilience. Thus, we further explore the moderating effects of strategy deviance (i.e., deviant strategy), stakeholder relationships (i.e., the dependency of suppliers), and the industrial environment (i.e., industry concentration) of niche leaders on the relationship between the long-term orientation and organizational resilience.

We test our hypotheses by using a sample of China's publicly listed niche leader companies identified by the Ministry of Industry and Information Technology, our theoretical model receives empirical support. Due to the difficulty of measuring the temporal orientation of managers, a few empirical researches are conducted to examine the outcome of temporal orientation. In order to solve this problem, we conduct a text analysis to effectively measure manager's long-term orientation. We find that the long-term orientation of niche leaders has a positive impact on organizational resilience. We also show that deviant strategy and industry concentration have positive moderating effects on the relationship between the long-term orientation and organizational resilience, while supplier dependency has a negative moderating effect on that relationship.

This study contributes to the literature on organizational resilience and niche

leaders in several ways. Firstly, this study complements the research stream of niche leaders. Prior researches mostly focus on the innovation strategy, global strategy, or the geographic distribution of niche leaders (Schenkenhofer, 2022). Our finding deepens the understanding of niche leaders' another important characteristic: organizational resilience, which is increasingly essential in the VUCA environment. Secondly, we take a time-oriented micro perspective to explain organizational resilience (Lin et al., 2019; Lu et al., 2022). Existing research has examined the antecedents of organizational resilience from the perspective of firm's resources, capabilities, and routines. Our study complements the existing literature and provides a micro lens of temporal orientation to explain organizational resilience. We further show that this effect varies across niche leaders, highlighting the effect of temporal orientation on resilience is contingent on niche leaders' heterogeneous strategy and stakeholder relationship and heterogeneous industry conditions. It contributes to rich the context study of organization resilience.

2. Theoretical background

1. Niche leaders

Niche leaders are successful companies in the top three positions in a niche market segmentation (Simon, 1992, 1996). Prior studies on niche leaders are mostly try to answer the question: "what types of companies can become the hidden champion?" (McKiernan & Purg, 2013). Much of the literature focuses on the typical strategies of niche leaders, such as their global strategy, specialist strategy, innovation strategy, and high quality instead of a price strategy (Audretsch et al., 2018; Din et al., 2013; Johann et al., 2021; Lehmann et al., 2019; Litz, 2013; Schenkenhofer, 2022).

How to maintain competitive advantages and keep resilient outcomes become a tough challenge for niche leaders when facing the VUCA environment. Organizational resilience has become one key determinant for niche leaders to achieve advantage and keep positions in the industries, especially when a shock occurs. However, how do niche leaders achieve organizational resilience remains largely unexplored by existing studies.

2. Organizational resilience

Organizational resilience enables firms to survive and prosper in complex environments. The concept of organizational resilience is defined in many ways. For example, Lengnick-Hall et al. (2011) defined organizational resilience as an outcome

and focus on the antecedents of the resilient outcome. Meanwhile, some scholars viewed organizational resilience as a process and defined it as how organizations deal with adversity to achieve a resilient outcome (Sutcliffe, 2003). A few scholars argue that organizational resilience could not be seen as a process because it is somehow a "black box" and it can only be measured in the case when the process is successful (Hillmann & Guenther, 2021). Also, some researchers built a capability-based understanding of this concept. Richtnér and Löfsten (2014) pointed out that only when organizations have both the ability and capability of resilience can they take action to overcome the tough situation (Richtnér & Löfsten, 2014).

Organizational resilience has been analyzed at different levels (Linnenluecke, 2017). Some studies point out that it is an individual level concept that involves personal or team characteristics while other scholars think it is an organizational level concept that is derived from the organization routines (Lengnick-Hall et al., 2011). Other scholars argue that the most essential domain of this concept is the stability domain and other domains are the addition of this concept (Hillmann & Guenther, 2021). Following the research of DesJardine et al. (2019) and Hillmann and Guenther (2021), we view organizational resilience as the organization's ability to persist despite the disruption.

The Extant literature has explored the antecedents of organizational resilience from different perspectives. A few studies documented that slack resources are fundamental to resilience as they strengthen an organization's competence to overcome difficulties (Gittell et al., 2006; Lengnick-Hall & Beck, 2005). Some scholars point out that innovations play an essential role in establishing organizational resilience (Burnard & Bhamra, 2011). For example, Reinmoeller and van Baardwijk (2005) highlighted that innovative companies can build up their competitive advantage which will make them more resilient. The network is also distinguished as an important factor to influence an organization's resilience in which organizations can gain more support (Kahn et al., 2013; Lengnick-Hall & Beck, 2005; Vogus & Sutcliffe, 2007). Furthermore, the absorptive capability is considered another explanation for organizational resilience (Richtnér & Löfsten, 2014). Hillmann and Guenther (2021) summarized three main antecedents of organizational resilience: resilient behavior, resilience resources, and resilience capabilities. The above factors related firms' resources and capabilities are indeed important antecedents of organizational resilience. However, niche leaders are usually small and medium-sized enterprises, and are constrained by their resources and

capabilities. Therefore, other factors, beyond resources and capabilities, might play a critical role in helping niche leaders develop organizational resilience. In this study, we explore the antecedents of organizational resilience from the view of temporal orientation.

3. Temporal orientation

Temporal orientation refers to the manager's subjective preference for time (Barreto et al., 2022; Weis & Klarner, 2022). There are several dimensions of temporal orientation including monochromic versus polychromic (Souitaris & Maestro, 2010), clock time versus event time (Crossan et al., 2005), and long-term orientation (LTO) versus short-term orientation (STO) (Flammer & Bansal, 2017; Souder & Bromiley, 2012). In this research, we focus on the dimension of long-term orientation (LTO) versus short-term orientation (STO).

Long-term orientation refers to the manager's preference for the future. In a long-term-oriented company, managers may pay more attention to innovation, relation-specific investment, and long-term relationships with stakeholders (Flammer & Bansal, 2017). Scholars summarize that CEO's long-term orientation may lead to comprehensiveness, speed, and creativity of strategic decision-making processes (Lin et al., 2019).

Existing literature focuses on the financial and non-financial outcome of long-term orientation. On the one hand, long-term orientation is suggested to play a positive role in improving firms' performance. Some scholars investigate the positive relationship between cultural level long-term orientation and corporate social responsibility performance (Graafland & Noorderhaven, 2020; Wang & Bansal, 2012). Flammer and Bansal's research confirmed that long-term orientation leads to higher firm value and operating performance (Flammer & Bansal, 2017). At the same time, some scholars argue that the relationship between a firm's performance and long-term orientation is not linear but quadratic (Souder et al., 2016). Except for the financial and non-financial outcomes of long-term orientation, some scholars also put their eyes on the relationship between long-term orientation and successful family business entrepreneurship (Eddleston et al., 2012).

Few research pays attention to the volatility of the firm's financial outcome which is increasingly important in the period of VUCA environment. To address the gaps above, we try to understand the antecedents of organizational resilience from the

perspective of time orientation(Crossan et al., 2005). Figure 1 is the theoretical framework of the study. We suggest that the long-term orientation of niche leaders will help them to improve organizational resilience. And the positive relationship between long-term orientation and organizational resilience will be moderately affected by deviant strategy and supplier dependency of the niche leaders, and the concentration of the industry that the niche leaders belong to.

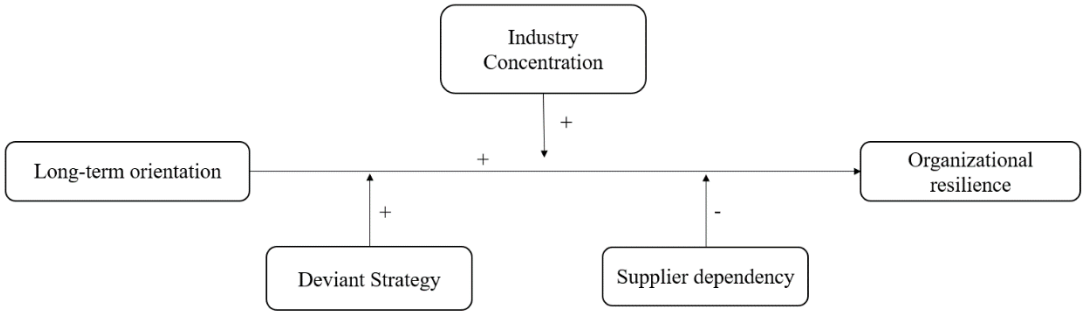

Figure 1. The hypothesized theoretical framework

3. Hypothesis

3.1.Long-term orientation and organizational resilience

Literature about temporal orientation points out that long-term orientation has a strong relationship with organizations' innovation, and stable stakeholder relationships (Flammer & Bansal, 2017; Lin et al., 2019). In China, which is in a period of economic transition, some enterprises become short-sighted in strategy for short-term interests and attempt to achieve huge profits in the window of opportunity in many fields, instead of in-depth development in specific fields, which is not conducive to their long-term development. When the impact comes, these enterprises often lack organizational resilience due to supply chain disruption, lack of core competitive advantages due to the lack of innovation capability, and so on. But as we can see from the niche leaders in China, most of them are long-term orientation and during the period of trade war and COVID-19, they all show good organizational resilience. The long-term orientation may associated with organizational resilience for several reasons.

Firstly, organizations with long-term orientation are more innovative. Prior research has found that managers who have long-term orientation are more likely to fight against management myopia and improve enterprise value by pursuing innovation (Flammer & Bansal, 2017). Besides, niche leaders usually focus on incremental and steady

innovations within close-customer relationships and efficiency-based innovations to ensure sustainable growth while effectively avoiding innovation risks (Din et al., 2013; Simon, 1992, 2009).

Secondly, organizations with long-term orientation have a more stable and long-lasting relationship with external stakeholders, thus maintaining organizational resilience in a volatile environment. For the upstream of the supply chain, due to the long-term orientation of niche leaders, the suppliers and the niche leaders usually built mutual trust between each other (Reinemann, 2019). For the downstream of the supply chain, despite the factors of trust of each other, niche leaders interact with customers frequently and can catch what the customer needs, and create value for their customer to increase customer loyalty (Audretsch et al., 2018). Furthermore, because niche leaders' products are usually high quality, loyal customers can strengthen their reputation through word-of-mouth recommendations.

Thirdly, as for human resources, niche leaders usually attract talent in a specific field (Lehmann et al., 2019), and do a lot of specific investments such as the building of training platforms thus making the staff turnover rate lower than other firms. As we observed in the reality, niche leaders in China like JINFEI HOLDING GROU which focuses on auto manufacturing, make lots of investments in the construction of the scientific research platform and talent training. They established an automobile and motorcycle research institute and set up a national enterprise technology center which is beneficial to both the development of employees and the innovation performance of the firm. While all these investments need the support of long-term orientation due to their long return period, they are all rewarding when firms meet external shocks. Hence, we propose:

H1: long-term orientation has a positive association with organizational resilience.

3.2.The moderating role of strategy deviance

One of the important characteristics of niche leaders is their deviant strategy. Simon concluded that "the single-minded specialist usually beats the generalist." Meanwhile, "focus and depth" is one of the important pillars in explaining the success of niche leaders in Simon's model (Simon, 2009). The more differentiated a company is, the better able it is to maintain stable and continuous upstream and downstream relationships with suppliers and customers in a volatile environment.

First, from the lens of stakeholders, due to the deviant strategy, when suppliers or

customers want to look for manufacturers in a certain field, they will think of the unique niche leaders in the niche market segment.

Second, from the lens of niche leaders, because of the deviant strategy, niche leaders can allocate their resources to the niche market segment, thus ensure catch the latest market developments, identifying the product and service the customer mostly values, and the investment in innovation (Din et al., 2013). From this point, the hidden champion can maintain a sustainable and stable relationship with customers that catch by the deviant strategy. Based on the above two points, due to the deviant strategy, niche leaders can not only continuously attract stakeholders but also maintain long-term stable relationships with stakeholders.

Thirdly, due to the deviant strategy of niche leaders, their technical employees are also skillful in their field. Since the hidden champion is the leading enterprise in the niche market segment, the technical employees usually have high employee loyalty. At the same time, for all employees, the employees in niche leaders with deviant strategy often highly identify with the culture of the enterprise thus they are less likely to leave. Therefore, from the perspective of human resources, the deviant strategy positively moderates the positive effect of long-term orientation on organizational resilience. Hence we put forward:

H2: The positive relationship between LTO and organizational resilience is positively moderated by the deviant strategy.

3.3.The moderating role of stakeholder relationship

In the VUCA environment, the relationship between firms and stakeholders plays a more and more important role. Niche leaders often run a B2B business model and build strong brands in B2B markets and their steady increase in performance largely depends on the stability of suppliers (Santa & Kekenovski, 2013; Simon, 2018, 2020; Táborecká-Petrovičová et al., 2013). Under the dual pressures of the pandemic and the trade war, if the hidden champion is dependent on a few suppliers, the value chain can easily be disrupted due to shocks, which can affect the sustainable development of the organization. Hence we propose that:

H3: The positive relationship between LTO and organizational resilience is negatively moderated by supplier dependency.

3.4.The moderating role of industrial concentration

Apart from the characteristics of niche leaders, the external environment is an important factor needed to be carefully considered.

Under the high industry concentration, niche leaders occupy a large share of the market (Ali et al., 2014; Hou & Robinson, 2006). Therefore, when customers are looking for products in a certain segment, they can notice the niche leaders for the first time, which will bring a steady flow of customers to the niche leaders. At the same time, because the niche leaders have a higher market position in the segmented field when the industry concentration is high, they can have higher bargaining power, so they can more effectively implement the cost leadership strategy (Lei & Wu, 2022; Porter, 1980, 1997).

On the other hand, when the industry concentration is high, the industry life cycle has entered a relatively mature stage. In this case, niche leaders can better establish a comprehensive understanding of the industry's development trends and external environment, identify innovation opportunities faster, and deal with external shocks more effectively. Hence we propose:

H4: The positive relationship between LTO and organizational resilience is positively moderated by industrial concentration.

4. Methodology

4.1.Sample and data

To test the hypothesis above, we are going to draw a study on publicly listed niche leader companies in China. The list of niche leaders is issued by the Ministry of Industry and Information Technology of China.

We utilized multiple sources to test our hypothesis. Firstly, we use the financial data and other company characteristics data from China Stock Market and Accounting Research Database (CSMAR) which provides credible information about Chinese companies' background and financial statistics. Secondly, we use text analysis to measure the manager’s temporal orientation. Based on the existing long-term oriented word set, Management's Discussion and Analysis (MD&A) in the enterprise annual report and Word2Vec machine learning method (Souder & Bromiley, 2012), we developed the long-term oriented Chinese word set and use the text analysis method to construct the long-term oriented index of managers.

4.2.Variables and measurement

4.2.1. Dependent variable

Organizational resilience Organizational resilience has been widely accepted as a stability domain (Hillmann & Guenther, 2021). Following existing research, we measure organizational resilience by three-year volatility of profit rate (Lv et al., 2019; Ortiz-de-Mandojana & Bansal, 2016). For understanding convenience's sake, the index of organizational resilience be calculated as follows:

$$\text{Organizational resilience}_{it} = 1\text{- three-year volatility of profit rate}$$

4.2.2. Independent variable

Long-term orientation: Organization's temporal orientation can be reflected in their disclosure (Flammer & Bansal, 2017). Following the existing literature, we construct the long-term oriented index from three dimensions: futurity, continuity, and perseverance (Lumpkin & Brigham, 2011). We label this index LTO. To construct this index, we conduct textual analysis of the MD&A of firms' annual reports.

Table 1. Long-term orientation word set

(1) Seed word	
Sources	Manager Discussion and analysis of the annual report
Word set	**Futurity:** Future, opportunity, prospect, forecast **Continuity:** long term, five years, ten years **Perseverance:** hold on, persist in
(2) Word set expansion	
Method	Expand the word set through Word2Vec
Word set	135 words in three dimensions

Table 2 Similar word results example through Word2Vec

Dimension	Similar word	Similarity (based on annual report context)	Word frequency
futurity	future market	0.5652	4796
futurity	future development	0.5400	42604
futurity	in the future	0.4591	12220
futurity	a new round of	0.3911	7723
futurity	trend	0.3634	471
futurity	sustainable development	0.3546	26706

4.2.3. Moderating variables

Industrial concentration Industrial concentration (IC) is the indicator that describes the firm distribution of an industry (Hou & Robinson, 2006). We use Herfindahl Hirschman Index (HHI) to measure industrial concentration.

Supplier dependency We used the ratio of the top five suppliers' purchases to the total annual purchases as an indicator of supplier dependency (Schiele & Vos, 2015).

Deviant strategy Following the prior research, we measure this variable based on six indicators that capture firm strategy (Mintzberg, 1978, 1984; Tang et al., 2011): (1) advertising intensity; (2) R&D expense; (3) capital intensity; (4) plant and equipment newness; (5) selling, general and administrative expense; (6) financial leverage. The six strategic dimension indexes of each enterprise were respectively subtracted from the average value of the index in the same industry in the same year, then divided by the standard deviation of the index to standardize, and the absolute value was taken to obtain the degree of deviation of each enterprise from the average level of the industry in each strategic dimension.

4.2.4. Control variables

We controlled for firm characteristics, industry characteristics which might affect the resilience of the firm. We measure Firm age as the length of time since the firm was founded and firm size using the natural logarithm of the asset of the firm. We also control the firms' financial situation, government structure and ownership including asset-liability ratio, Tobinq, firms' property, the board size, the separation rate of "ownership and control", and the shareholding ratio of the largest shareholder. We also control the degree of business diversification which is the key characteristics of the niche leaders that might have influence on the resilience (Barton, 1988).

4.3.Estimation methods

To test our hypotheses, we use a firm-year unit of analysis. Our data are structured as a pooled cross-sectional (across firms) and time series (over years), thus we use a panel data method. Based on Wooldridge (Wooldridge, 2002), we process the data in the following steps. Firstly, we used the Breausch-pagan Lagrange multiplier test to see whether the pooled ordinary least squares approach or the panel data should be used.

The results of Breausch-Pagan test for heteroscedasticity are statistically ($\chi2 = 17.12$, $P < .001$; $\chi2 = 72.04$, $P < .001$; $\chi2 = 99.48$, $P < .001$; $\chi2 = 84.92$, $P < .001$; $\chi2 = 79.37$, $P < .001$; $\chi2 = 83.37$, $P < .001$; $\chi2 = 41.27$, $P < .001$), thus we use panel data method. Secondly, we use the Hausman test to see whether random effects or fixed effects should be chosen to test the model. The results of the Hausman test indicate that a generalized least squares random effects model is appropriate for our test.

5. Results

Table 3 shows the descriptive statistics and the correlations. We also adopted the variance inflation factor to test for multicollinearity. The result of VIF range from 1.46 to 1.62 implying that there was no serious multicollinearity problem in this study.

Table 4 is about the estimation results. We report six models, respectively, Model 1 includes the control variables only. In Model 2, we added the long-term orientation (LTO) which is our independent variable. The results support our Hypothesis 1 which assumes long-term orientation has a positive association with organizational resilience. In Model 3, we added the industrial concentration which moderates the relationship between LTO and organizational resilience of niche leaders ($p<0.01$), offering support for Hypothesis 2. In Model 4, the supplier dependency negatively moderates the relationship between LTO and organizational resilience of niche leaders ($p<0.1$), thus supporting the Hypothesis 3. In Model 5, the deviant strategy positively moderates the relationship between LTO and organizational resilience ($p<0.1$), supporting the Hypothesis 4. Model 6 is the full model that contains all the variables and provide the robust support for the hypothesis.

We also did the robustness test, which could be provided if need.

Table 3. Descriptive statistics and correlations

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Organizational resilience	0.972	0.032	1													
2. Long-term orientation	0.043	0.014	0.067	1												
3. Industrial concentration	0.083	0.079	-0.165***	-0.025	1											
4. Supplier dependency	5.608	7.542	-0.016	-0.053	-0.094*	1										
5. Deviant strategy	0.611	0.268	-0.097*	-0.146***	0.103*	0.155***	1									
6. Firm age	18.100	5.072	-0.095*	0.006	-0.062	0.119**	-0.055	1								
7. Firm size	21.280	0.644	0.080	-0.072	-0.072	-0.159***	0.013	-0.120**	1							
8. Asset-liability ratio	0.292	0.143	-0.051	-0.057	0.105**	-0.225***	0.000	-0.061	0.381***	1						
9. Separation of control rights	3.784	6.702	0.094*	0.105**	-0.005	-0.062	0.024	-0.129**	0.053	-0.081	1					
10. Largest shareholder rate	31.760	11.650	0.131**	-0.035	0.119**	0.071	0.013	-0.083	-0.101*	-0.036	0.179***	1				
11. Tobinq	3.276	2.579	0.001	0.053	-0.027	0.265***	-0.001	-0.100*	-0.269***	-0.286***	0.008	0.007	1			
12. SOE	0.085	0.280	-0.039	0.255***	-0.066	-0.075	0.093*	0.110**	0.094*	-0.006	0.090*	0.236***	-0.081	1		
13. R&D spend ratio	7.112	4.356	-0.076	0.026	-0.093*	-0.040	0.043	-0.215***	-0.102*	-0.196***	0.020	-0.128**	0.281***	0.076	1	
14. Business Diversification	0.802	0.252	-0.021	0.097*	-0.158***	0.198***	0.063	0.150***	-0.147***	-0.292***	-0.025	0.171***	0.178***	-0.043	0.009	1

Table 4 The estimation results

VARIABLES	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Firm age	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(-0.92)	(-0.67)	(-0.74)	(-0.85)	(-0.77)	(-1.00)
Firm size	0.007**	0.008**	0.006**	0.007**	0.007**	0.006**
	(2.12)	(2.40)	(2.07)	(2.32)	(2.34)	(2.00)
Asset-liability ratio	-0.029**	-0.028**	-0.026*	-0.032**	-0.025*	-0.028**
	(-2.02)	(-1.98)	(-1.89)	(-2.23)	(-1.79)	(-2.01)
Separation of control rights	0.000	0.000	0.000	0.000	0.000	0.000
	(0.94)	(0.66)	(0.49)	(0.28)	(0.59)	(0.06)
Largest shareholder rate	0.000**	0.000***	0.001***	0.000**	0.000***	0.000***
	(2.25)	(2.59)	(3.03)	(2.44)	(2.77)	(2.95)
Tobinq	0.000	0.000	0.001	0.000	0.001	0.001
	(0.54)	(0.62)	(0.81)	(0.58)	(0.76)	(0.81)
SOE	-0.008	-0.013*	-0.013*	-0.013*	-0.012*	-0.012*
	(-1.22)	(-1.88)	(-1.83)	(-1.84)	(-1.71)	(-1.78)
R&D spend ratio	-0.001	-0.000	-0.001	-0.000	-0.000	-0.001
	(-1.12)	(-0.93)	(-1.44)	(-0.88)	(-0.90)	(-1.30)
Business Diversification	-0.006	-0.009	-0.014*	-0.007	-0.011	-0.014*
	(-0.78)	(-1.15)	(-1.82)	(-0.98)	(-1.43)	(-1.83)
LTO		0.344**	0.362***	0.288**	0.289**	0.257*
		(2.46)	(2.65)	(2.03)	(2.05)	(1.80)
IC			-0.053**			-0.055**
			(-2.02)			(-2.09)
LTO*IC			5.185***			3.281
			(2.74)			(1.63)
Supplier dependency				-0.000		-0.000
				(-1.15)		(-1.04)
LTO*Supplier dependency				-0.043*		-0.050**
				(-1.88)		(-2.20)
Deviant strategy					-0.003	0.000

					(-0.39)	(0.06)
LTO*Deviant strategy					1.308***	1.131**
					(2.70)	(2.20)
Constant	0.800***	0.771***	0.816***	0.781***	0.785***	0.829***
	(10.88)	(10.41)	(11.15)	(10.56)	(10.61)	(11.29)
N	352	352	352	352	352	352
R^2	0.090	0.107	0.152	0.117	0.130	0.174
ΔR^2	0.0412	0.0555	0.0984	0.0612	0.0749	0.110
F	1.837	2.085	2.824	2.090	2.352	2.741

*** p<0.01, ** p<0.05, * p<0.1

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Inclusive Employment for People with IDDs: A Comparison between China and Nigeria

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Inclusive employment for people with IDD: A comparison between China and Nigeria

Introduction

Inclusion factory is a social enterprise providing employment opportunities to people with both physical and intellectual/developmental disabilities. It is located in Suzhou, Jiangsu Province of China. To enhance inclusive employment for people with disabilities, they have hired about 50 people with intellectual and developmental disabilities as production workers of ages 18 to 46. Their objective is to create a sustainable framework that uses employment to aid in the inclusion of people with disabilities/IDDs. The majority of their production orders come from the Chinese subsidiaries of German MNEs operating in automotive and electronics industries. Opened in 2015 with 12 employees, Inclusion factory had a total of 50 employees in 2020. In 2021, the total production volume was reported at 1,557,887 pieces, with an increase of 54% compared with 2020.

The enterprise has strong ties with large German MNEs. It was established based on the German '**Lebenshilfe'** model and supported by the German Chamber of Commerce as well as the European Chamber in China. Those companies not only entrust them with orders but also donate start-up funding. The company provides advanced facilities and customized work tools for their employees to improve their production efficiency as well as ensuring safety. For example, in order to protect employees from getting their hands caught in the machine, the machine which originally could be switched on and off with one hand was redesigned to require both hands to be placed at the switch before it could be turned on. In addition, there is a colour system to help mentally challenged employees distinguish between raw materials, finished products and defective products. However, with such a large population, only a few of them could obtain employment opportunities. Currently, people with no disabilities suffer from unemployment, which leaves the majority of people with IDDs at an even higher degree of lack of said employment.

The successful practice of inclusion factory proves that hiring people with IDDs could be considered an efficient way to promote social inclusion, reduce unemployment, improve standards of living, as well as increased awareness of disabilities. This study aims to examine how the social model influence the attitudes and behaviours of the public, and the implications the Inclusive Factory could have for global corporations that are looking to help people with IDDs in China and other

countries. In addition, practically, it provides insights into how to implement equity, diversity, and inclusion in other areas in China and other emerging economies such as Nigeria.

Literature Review

Nigerian and China are two distant giants that have been long term friends. Both nations have enjoyed trading, partnering and business together for many years, as well as sharing certain similarities. While they may belong to different cultural clusters according to the GLOBE culture study (House et al, 2004 in Peterson 2004), with China being of the Confucian Asia cluster along with countries like Taiwan and Singapore, and Nigeria along with countries like Namibia and South Africa being of the Sub-Saharan cluster ("Results - Anglo GLOBE Project", 2004), China has the largest population in the Asian continent, as does Nigeria in Africa. These large populations are fully dotted with a wide variety of tribes, cultures and languages. The 2 nations are also regarded as emerging economies in their respective continents.

With regards to economies, Africa is already recognized as the continent with the fastest growing population in the world, along with having the highest rate of entrepreneurship among working-age adults (United Nations , 2020). However, it also reports the most stagnant growth/discontinuance of said entrepreneurship (Gwaambuka, 2019). Africa is also the continent with the largest number of people living in extreme poverty (Adebayo, 2018), the country contributing the most to this percentage being Nigeria. This alongside a multitude of other issues such as poverty, diseases, unemployment, and infrastructural development (many of which are a thing of the past in China) are faced by both the abled and disabled. Despite being known as the largest oil producer in Africa, as well as having the biggest economy, Nigeria reports the lowest level of wealth with 40% living well below the line and another 25% categorized as vulnerable (World Bank, 2020). China on the other hand is the country with the highest population in the world, that has enjoyed rapid economic and technological expansion, even though it is still referred to as an emerging economy. However, the nation has the issue of its ageing population to consider as they make up a majority of its occupants.

Values, practices and attitudes associated with the cultural norms of a country have the power to sway an individual’s perception towards people with disabilities in almost all aspects, such as

associating with them, setting up business with/for them. From preliminary data gathered, China and Nigeria share similar values and practices of respect, saving face and preserving dignity when it comes to people with IDDs, hence the practice of hiding them from public, and/or the belief that having a child with IDDs is a punishment for a sin of the past.

Social Model of Disability

The social model of disability refers to disability as a consequence of the way society is set up and the barriers it puts in place (Oliver, 1983). Under this model, it is society, and not the individual, is responsible for the social exclusion and inequality disabled individuals face. This model was proposed by Mike Oliver in the 1980s. The model offers that social disability is of three types:

- Organizational barriers occur when society and its set ups cause problems to disabled individuals. An example is the audiology department of a hospital booking appointments over the phone. Such an inaccessible system makes everyday tasks difficult and an inconvenience for those disadvantaged individuals.
- Physical barriers occur when structures in a society present disabled individual with inaccessibility. A good example is buildings that possess no access to all or some floors, i.e., no ramp or lift, constituting to a hinderance for those who are not able to walk.
- Attitudinal barriers happen when negative attitudes are elicited, such as poor expectations of intelligence/abilities, bullying, discriminatory attitudes towards disabled individuals. For instance, speaking to the aid/guardian of someone with a disability rather than them directly, may encourage discriminatory mindsets.

People with disabilities may be denied equal chances due to negative sentiments based on prejudice or stereotyping. The medical model of disability states that people are impaired due to their impairments or differences and focuses on what is "wrong" with the individual rather than what the individual need. On the contrary, the social model of disability takes the stance that people are hindered by impediments in society that spill over int o other areas like employment, lifestyle and integration.

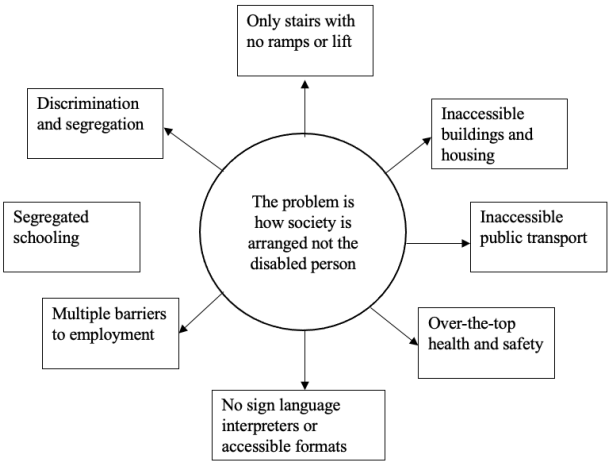

Figure 1: The social model of disability

Social Entrepreneurship as a Type of Planned Behavior for People with IDDs

Social enterprises vary from traditional business organizations with the key differences being in values or goals, strategies, and organizational structure (Dart, 2004). Social enterprises have been used as means for supporting "incarcerated adults, homeless people, at-risk youth, developmentally disabled individuals, folks in recovery from substance abuse, welfare recipients, and the general underemployed" (Cooney, 2011, p. 186). Empirical research on the topic of sustainable social entrepreneurship of/for the mentally ill and disabled is limited. Although such shortcoming in research has been mentioned by scholars often, not much has been put forward to offer explanations (Dwertmann, 2016). These subjects of mental illness and disability has managed to rise to become a topic of importance in the past few decades to stimulate various world bodies and agencies to looking into them with keenness. This idea has come about as a result of the employability rates of disabled population being very low (Norafandi, Nurazzurra and Diah, 2017), and has, unintentionally, increased the focus for and led to persons with disabilities (PWDs) receiving more attention that mentally challenged persons (MCPs).

Social entrepreneurship carves a pathway towards employment and is so far the one alternative that offers a solution which enriches their value and standard amongst those who are able bodied. A great percentage of SE research is dominated by American and European contexts. Empirical research that explores or supports innovative social entrepreneurship for the intellectually and developmentally disabled is lacking (Johnson, 2003). The literature concerning social entrepreneurship tends to focus

on specific issues such as definitions (Bacq and Jansen, 2011), literature and its bibliometrics (Rey-Martí, Ribeiro-Soriano and Palacios-Marqués, 2016; Macke, Sarate, Domeneghini and Silva, 2018), relationship of SE and social innovation, measuring the social effect it has (Rawhouser, Cummings and Newbert, 2017), as well as rigor and quality of empirical research of SE (Short, Moss and Lumpkin, 2009). However, not much has been known about the macro level factors that influence social entrepreneurship that gears toward helping these disadvantaged individuals, with the case being even less for the mentally challenged population.

Methodology

For the purposes of this research project, a mixed methods approach is proposed. The qualitative data will be collected using person-to-person interviews . The results would provide knowledge on people's motives in helping; they would also generate items that would be appropriate for the follow-up survey. The quantitative data will be collected using questionnaires developed with relevant measures from the literature and items that we discovered from the qualitative data. The survey data would be used to test the hypotheses and be used to generate a conceptual model for future research.

Procedures

Two sample group for the interviews in the respective countries. The first group will be selected using purposive sampling approach (people with direct exposure to people with IDDs such as parents, siblings, and caretakers), while the second group will be selected using a random sampling approach of the general public. This group will include people that may or may not have direct exposure to people with IDD. Interviews have been completed in Nigeria and are currently ongoing in China. The participants for the interview data will be accessed based upon pre-exiting relationships with the researchers, while a hyper link will be distributed for the surveys through the researchers' networks as well. As respondents can complete the survey on their phones, tablets or computers at their own time, the interview participants will be requested to secure a safe and quite location for a maximum of 2 hours, that is free from noise pollutants to ensure participants remain engaged and avoid distractions.

Prior to meeting for the interviews, a brief description of the purpose of the study will be provided to each participant. As the nature of enquiry is of a sensitive type, interviewees will be politely encouraged to recall, with as much elaborate detail as they are able, instances that altered their

perceptions, accounts of prior experiences that shaped their behaviours moving forward, as well as how their intentions were cultivated and/or engineered.

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How Industrial Policy Affects Technologically Advanced Small and Medium-sized Enterprises Firms' Growth? - An Institution-based View

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How industrial policy affects technologically advanced small and medium-sized enterprises firms' growth? – An institution-based view[1]

Porter (1980) argues the market structure of an industry is the most important determinant of firms' behaviors. Despite the prevalence usage of laws and regulations governing the nature of competitive rivalry, management literature pays scant attention to the link between industrial policy (IP) and firms' growth. Based on an institutional framework, this paper empirically examines the impact of industrial policies on the innovation and development of technologically advanced small and medium-sized enterprises (TASME) by a new dataset of TASME. Within the institution-based framework, we examine the impact of government subsidies, tax breaks, credit support and tariff policy on the development of TASME.

Literature review and research hypothesis

In recent years, scholars and practitioners have not reached a consensus on the implementation effect of industrial policies. Supporters believe that the industrial policy can protect the currently infant industries with potential technological externality through "learning by doing": decreasing production costs in the increase of input (Greenwald and Stiglitz 2006); Lin (2011) pointed out that a successful industrial policy must focus on industries with comparative advantages of the country; Many findings of empirical research also support the view that industrial policy has a positive effect on the growth of enterprise (Johnson 1982; Amsden 1992; Wade 1990; Ito 1992). The opponents believe that due to the subjective bias of the policy makers, the industrial policy of "selecting

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winners" has no significant effect on promoting enterprise development: scholars found that, in both developed countries (Beason and Weinstein 1996; Blonigen 2016) and developing countries (Krueger and Tuner 1982; Baldwin 1992), industrial policies might even have a negative impact (Porter 2008)[2].

As a country actively pursuing industrial policy, China's industrial policy implementation has had a profound impact on the national economy. In general, there are two types of industrial policies: vertical IP and horizontal IP. Vertical IP targets on particular industries or firms. Vertical Industrial policies generally alleviate the financing constraints of enterprises through subsidies, tax breaks, credit programs, tariff adjustment, and simplification and relaxation of administrative approval. On the other hand, horizontal IP involves policies that create externalities covering a wide range of sectors and firms. For instance, government-lead investments in infrastructure; investments in educational sectors.

To analyze the IP effect on the growth of TASME, we draw on Narayanan and Fahey (2005) and Lazzarini (2013)'s theoretical framework (Figure 1).

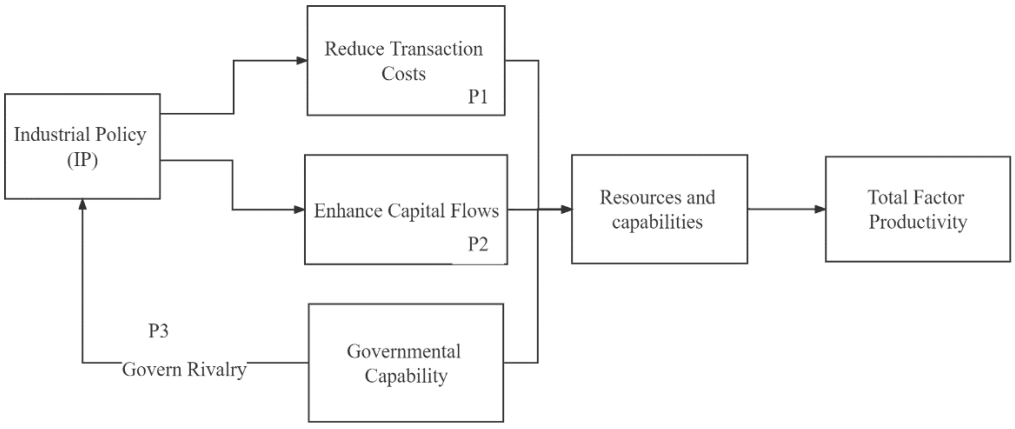

Figure 1

[2] Porter ME. 2008. On Competition: Updated and Extended Edition. Harvard Business School Press: Cambridge, MA

The first institutional feature, according to Narayanan and Fahey (2005), is **transaction costs.** It is particularly crucial for innovation in our emerging market setup. Innovation activity is a long-lasting, costly and uncertain process with high rates of failure. It bears significant transaction costs. As pointed out in North (1990), these costs include both the costs of search, measurement, policing and enforcement, and an 'uncertainty discount reflecting the degree of imperfection in the measurement and enforcement of the terms of exchange.' Within an emerging market context like China, the influence of transaction costs can not be overlooked (Henisz, 2000). Broadly, in many of these economies, the institutional framework lags in several ways such as formal structure and enforcement that underpins efficient markets (North, 1990, p. 67).

IP, in particular vertical IPs such as tax holidays and imports tariff, aims to reduce capital costs and R&D costs, improve the risk tolerance and failure tolerance of enterprises, and thus may stimulate innovative activities and production efficiency. Horizonal IP could also facilitate innovation activities by improving the business environment of the countries, e.g. faster public transport, lower internet connection cost, sufficient high-quality labor supply and etc. Therefore, we have the following prediction:

Proposition 1: IP is more likely to lead to an increase in TASME's innovation if they reduce transaction costs.

The second institutional feature is **capital flows**. Comparing to developed countries, the emerging markets often have lower-level financial development. High-tech SME face difficulties of access to external finance due to high probability of failure, lack of collateral and internal funds, as well as potential agency problems (e.g. Akerlof (1970); Hall and Lerner (2010); Jensen and Meckling (1976)). In this sense, vertical IP such as credit programs as well as direct subsidies

from government can mitigate the financial constraints of TAMES. Horizontal IPs that provide more transparent accounting disclosures ((Kogut and Spicer, 2002)), promotes intellectual property rights (Isobe et al., 2000) and creditor-friendly credit laws might can also enhance financial market development in an emerging market. Thus, we have the following testable prediction:

Proposition 2: IP is more likely to lead to an increase in TASME's innovation if they enhance capital flows

The third facet of institutional feature is the legitimacy of competition. The focus in our paper is on the IP **governing rivalry** which is central to any market-based economies. As a key input in Lazzarini (2013)'s conceptual model, successful IP requires distinctive ability to perform successful interventions. We adopt the definition of government capability by Honadle (1981: 577) as a distinctive public skill "to anticipate and influence change; make informed, intelligent decisions about policy; develop programs to implement policy; attract and absorb resources; manage resources; and evaluate current activities to guide future actions."

As China's economy has entered a new stage of pursuing high-quality economic development, the industrial policy reinforcing specification has been greatly challenged. The main view of opponents is that the implementation of industrial policy based on comparative advantage is often limited by the **cognitive limitations** of policy makers and the failure of incentive mechanisms。Therefore, the implementation effect is not significant and sometimes even has a negative impact on the long-term development of the enterprise.

The **rent-seeking** theory (Brollo et al. 2013) argues that the level of resource allocation in a region or department is positively related to rent-seeking behaviors. Although the industrial policy

brings more fiscal and taxes advantages such as subsidies and credit support to the winners, these resources are often accompanied by more rent-seeking activities (Chen et al. 2011); when implementing industrial policies, the policy makers might prioritize maximizing their own rent-seeking interests. Due to the high rent seeking costs, TASMEs are often unable to benefit from industrial policies or forced to squeeze resources from innovative activities because of lacking the political connection or state-owned background. (Yang 2011, Yang et al. 2017).

Therefor, capable government, when adopting vertical IP based on market competition are more likely to promote TASME. This will take place through two channels. First, instead of supporting firms with comparative advantage, capable policy makers will enhance more dispersion intervention within a particular industry, i.e. a more equitable distribution in policies to promote firm innovation; second, instead of supporting industries with monopoly firms, policy makes will target industries with higher level of competition. Based on these two views, we have the following predictions:

Proposition 3a: Vertical IP more equitably distributed within an industry would increase the TASME's innovation.

Proposition 3b: Vertical IP targeting on more competitive industry would increase the TASME's innovation.

Data

This paper has two main data sources: 1. China Industrial Enterprise Database; 2. A list of the TASME certificated by Ministry of Industry and Information Technology of the People's Republic of China (collected by Qichacha). We combined the two databases by using the nine digit "corporate legal person code" (法人代码) in the China Industrial Enterprise Database and the "unified social

credit code" (统一社会信用代码) in the TASME database to form the sample data of this study. At present, there are about 40000 specialized new enterprises at all levels. However, in our sample, due to the short and early period (1998-2007), 5500 companies were finally recognized (not yet in our sample) as TASME. However, this does not affect the representativeness of data samples and the validity of the empirical results. First of all, the policy of certificating and supporting TASME around 2015 is not the focus of this study. We focus on how to better design and implement industrial policies so as to encourage the formation and development of TASME. It is reported[3] that at the national level, the average years of establishment of TASME are 16 years, and more than half of them are 10-20 years old. Therefore, TASME that have been certificated since 2015 were in a critical period of life in our sample. Therefore, the conclusions of this study are of great significance to reveal what industrial policies are conducive to the development of TASM and thus to have rich policy implications.

This paper is to study whether and how IP can better promote the innovation and development of TASME. Therefore, we employ total factor productivity (TFP) to measure the innovation of enterprises. As one of the common indicators of enterprise production efficiency, TFP is generally considered to be able to measure process innovation. To measure competition, we will calculate the Lerner index at cities (county-level) and industries levels. The Lerner index measures markups by calculating the difference between price and marginal cost, and then calculates its importance relative to the company's total added value. First, we aggregate the operating profit, capital cost and sales of a given industry in a given city of a given year; The Lerner index is defined as the ratio of operating profit and capital cost difference to sales. Under perfect competition, there should be no

[3] Data source： https://baijiahao.baidu.com/s?id=1716468903438869840&wfr=spider&for=pc

excess profit higher than the cost of capital, so Lerner index should be zero; Therefore, the higher the degree of competition, the lower the Lerner index, and the two are negatively correlated. We redefine competition as 1-Lerner, so under perfect competition, 1-Lerner index should be equal to 1, while lower than 1 indicates a certain degree of monopoly. The closer this value is to 0, the closer the industry is to perfect monopoly in the given year and the given city. The implementation of industrial policies is likely to change regional competition in a short period of time. For example, preferential tax policies for medical or new energy vehicle industries can rapidly improve the annual financial performance of enterprises in these two industries. To avoid such endogeneity, we will use the competition at the beginning of the year (Formula (3)) in our subsequent calculations. The tariff data source of this study is the World Integrated Trading Solution (WITS) database by the World Bank.

Research methodology and empirical strategy

In the empirical analysis, we first provide sample data statistics of the proportion of TASME obtaining various industrial policies by years and sectors. We will also analyze the similarities and differences in sample statistics between our small sample of the TASME and the full sample of Aghion (2015) in this study and draw some general conclusion.

In this study, a two-way fixed effect model is used for regression analysis. The difficulty lies in the measurement of industrial policies based on comparative advantage and competition. For this reason, this paper constructs Herfindahl index and Lerner index related to competition to verify whether the degree of decentralization (concentration) of industrial policies in an industry ($PolicyDisp$), or the targeting of industrial policies towards industries with higher degree of competition ($PolicyTarget$) can effectively improve the TASME total factor productivity. The

basic regression formula is as follows:

$$TFP_{isct} = \beta_1 X_{ist} + \beta_2 I_{st} + \omega_m PolicyDisp_{misct} + \psi_m PolicyTarget_{mct} + \ell i + dt + \varepsilon_{ist} \quad (1)$$

Among them, X_{ist} represents the control variables at the company level (such as state-owned shares), I_{st} the control variables at the industry level (such as tariffs and industry competition levels), $PolicyDisp_{mict}$ IS the degree of dispersion of industrial policies within an industry, , $PolicyTarget_{mct}$ is the correlation between industrial policies and the initial competition status of the industry. ℓi is the fixed effect of the company and dt is the fixed effect of time. In addition, *s* represents industry, *t* represents year, *i* represents company, *c* represents city, and *m* represents industrial policy.

$PolicyDisp_{misct}$ is defined as follows, taking the subsidy as an example:

$$PolicyDisp_{subsidy_{isct}} = 1 - Herf_{subsidy_{isct}} = 1 - \sum_{h \in s, h \notin i} \left(\frac{Subsidy_{isct}}{Sum_{subsidy_{sct}}} \right)^2 \quad (2)$$

There are two ways to measure the impact of industrial policy allocation on enterprise innovation. On the one hand, Herfindahl index can be used to measure the competition within an industry. The more decentralized the industrial policies are, the stronger the competition will be. Herfindahl index is widely used to measure industrial concentration: the higher the market concentration, the higher the index, indicating that the market is close to monopoly; the lower the index, the higher the degree of dispersion. Similarly, we can use Herfindahl index to measure the concentration of industrial policies in an industry. Accordingly, the degree of decentralization of industrial policies can be expressed in terms of $PolicyDisp_m = 1 - Herf_m$; taking subsidies as an example, Herfindahl index $Herf_{subsidy}$ is defined as $\sum_{h \in s, h \notin i} \left(\frac{Subsidy_{isct}}{Sum_{subsidy_{sct}}} \right)^2$. Therefore, the higher the Herfindahl index is, the smaller $PolicyDisp_m$ is, which means the lower the degree of dispersion of industrial policies: industrial policies are concentrated in one or several enterprises in the industry; The lower

the Herfindahl index, the greater $PolicyDisp_m$ is , the more decentralized the industrial policies are, the more they are equitably distributed towards enterprises in the industry on average. After defining the subsidy, tax preference and credit support industrial policies in the same way, the parameters are brought into the regression model (1), and the regression coefficients demonstrate whether the dispersion of industrial policies in the industry promotes TFP growth. When the coefficient is negative, it means that the centralized industrial policy can improve the TFP of enterprises; on the contrary, if the coefficient is positive, it means that more dispersion in industrial policies can improve TFP of the TASME which supports **P3a**.

Furthermore, the $PolicyTarget_{mct}$'s definition of is as follows, again, taking the subsidy policy as an example:

$$PolicyTarget_{ct,\ subsidy} = Corr(SUBSIDY_{cst}, COMPETITION_{cs0}) \quad (3)$$

By calculating the correlation between the industrial policy *m* at the end of year *t* and the initial competition (t_0) degree ($COMPETITION_{cs0}$) at the level of industry *s*-city *c*, we can measure whether the industrial policy is biased towards the more competitive industry of the city in this year. As mentioned above, we use the Lerner index to measure the initial competitive status of the city where the industry is located. The larger $PolicyTarget_{mct}$ is, the more inclined the industrial policy is to the industries with more fierce competition; on the contrary, it is inclined to the industries with low competition. Regression with TFP, the positive and negative and intensity of its regression coefficient will indicate whether the implementation of precise industrial policy support and resource tilt in highly competitive industries can improve TASME's TFP. If the regression coefficient is negative, it means that the industrial policy that favors industries with relatively less fierce competition can improve the TFP of TASME; If the regression coefficient is positive, it means that the industrial policy inclined to the industry with relatively fierce competition can improve the

TFP of TASME, and it supports **P3b**.

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Specialized while Diversified, the Influence of Product Diversification and Market Diversification on SADI New-giant Firms' Performance.

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Specialized while diversified, the influence of product diversification and market diversification on SADI new-giant firms' performance.

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Introduction

In the past two decades, Chinese small high-tech firms have been playing more and more important roles in advancing the core technology in certain industries. Specializing in a niche field and taking advantage of their R&D capability, those small firms can continuously improve the existing advanced technology. This will increase their importance alongside the whole value chain and also help them to maintain a level of market share. Such firms can be viewed as Hidden Champions (Simon, 1992), which are typically depicted by directing limited resources and attention to maintaining the position in the niche. Also, they are not famous among the general public due to their intermediary position in the value chain. At the same time, the Chinese government also carried out a series of measures to support the development of those Hidden Champions in some strategically important sectors, aiming at achieving industrial upgrading, fulfilling import substitution, and improving the resilience of the domestic value-chain under huge uncertainty. The development of those Hidden Champions is closely related to the front-tier technology, the related value chain, and even the economic development of the whole country. Therefore, it is important to explore an efficient pattern by which the Hidden champion can maintain its specialty while achieving sustainable growth.

However, the hidden champions may be trapped in a dilemma in their development process. On the one hand, to maintain their advanced position in certain technology tracks or niche markets, they have to direct a large proportion of their resources and attention into the specialized field. This may restrict their decisions in expanding business scope. On the other hand, they also have to find a way to expand their downstream market, as obtaining substantial revenue is important for continuous investment in R&D activities and maintaining their advanced positions in the niche market. How to expand markets while maintaining their core technological capabilities focused?

In this research, we propose that diversification in product and/or geographic markets could help Hidden Champions to deal with the dilemma, and aim to examine the performance effect of product diversification and market diversification on the Hidden Champions. We propose that both the strategies of product diversification and

market diversification help to improve firms' performance, but the strength of the performance-enhancing effect varied under different conditions. The tactic of product diversification would be more beneficial when the firm has more shareholders from different industries, while the tactic of international diversification would be more beneficial if the firm has a higher level of technological depth. Detailed information on Chinese **SADI *small-giant*** firms was used to conduct the empirical analysis. Our research aims to contribute to the literature on firms' diversification strategies, as well as the research on Chinese Hidden Champions simultaneously.

Brief Literature Review

Product diversification, market diversification, and firms' performance

Product diversification is a popular strategy(Rumelt, 1974) but has never received consistent conclusions on its performance implications (Hoskisson and Hitt, 1990, Ramanujam and Varadarajan, 1989). Some of the research obtained supportive conclusions for diversification, while others got unsupported conclusions (Hitt et al., 1994, Hoskisson and Hitt, 1990). On the one hand, product diversification helps to spread the overall risk from external markets firms face; while on the other hand, it also increases the managerial costs firms would have to afford. So that the final effect of product diversification is hugely determined by the degree to which the benefits offset the costs. Another way to reconcile the inconsistent findings on the effect of diversification is to focus on the relatedness of the diversified products. (Hoskisson et al., 1993) found that the relationship between diversification and performance would be more negative as managers expand to new products that are unrelated to core competence.

Another literature stream that is related to firms' business scope is about firms' market scope. Topics related to this stream include international diversification and geographic diversification (Hitt et al., 2006, Rugman, 1976), which focus on the level of firms' market diversification. Compared to the findings of product diversification, research on market diversification has obtained more consistent findings. Most of the research concluded a positive relationship between market diversification and firms' performance (Bühner, 1987, Caves, 1982, Geringer et al., 1989, Rugman, 1976), as

market diversification help firms reduce the instability and risk of market returns (Bühner, 1987, Caves, 1982, Kim et al., 1993); provide firms more opportunity to conduct internal activities and benefit from the economics of internal markets (Rugman,1981).

However, previous research about product diversification and market diversification mainly focuses on the performance of large firms, as the diversification strategy was assumed to be the strategic choice of larger and mature firms who have a better ability to manage the increased costs and integrate among different markets. In this research, we would like to observe the influence of product diversification and market diversification in a new setting (i.e. the newly-emerged Hidden Champions in China), and would like to discuss how these two strategies of diversification influence their performance under different conditions.

Hypothesis Development

The performance effect of diversification strategy on Chinese Hidden Champions

Holding advanced technology in certain niche markets, Chinese newly emerged Hidden Champions could attain better performance by diversifying their products, as long as the products are diversified with relatedness. First, firms always develop new products based on the core technology they have. This kind of diversification could be viewed as related diversification, which may add fewer managerial costs than unrelated diversification. Meanwhile, product diversification help firms meet the needs of more market segments, thus improving their market share. This helps them to obtain higher bargaining power when faced with customers. Previous research also found that related diversification is beneficial for firms' performance (Kim et al., 1993). Therefore, we propose the following hypothesis:

> ***H1a*** *The level of product diversification has a positive influence on Hidden-Champion firms' performance. The higher the level of product diversification, the higher their performance would be.*

The level of market diversification represents the market scope within which firms may capitalize on the existing success (Hitt et al., 1994). For the hidden champions in the technology-intensive industries, achieving market diversification helps to replicate

the success in the previous market and enlarge the sales revenue based on already-invested R&D investment (Contractor, 2012, Pugel, 1978). So that market diversification enlarges the source of revenue without adding costs, this may benefit firms' performance. Thus, the following hypothesis could be developed:

> ***H1b*** *The level of market diversification has a positive relationship on Hidden-Champion firms' performance. The higher the level of market diversification, the higher their performance would be.*

We further explored how the influence of product diversification and market diversification varied under different conditions. The diversity of investors and the technology depth are two dimensions we would like to focus on.

When firms are invested by highly diversified investors, they are likely to obtain more market resources or commercializing opportunities for existing products. This is because each of the investors is willing to help the firm gain more sales revenue, which will bring a higher return to the investors. The opportunity provided by the diverse investors serves as valuable complementary assets for firms' already-existed products, thus strengthening the positive effect of product diversification on firms' performance. Hypothesis 2 could be developed as:

> ***H2*** *The diversity of firms' investors strengthens the positive relationship between product diversification and performance.*

If firms have a higher level of technology depth, this means that their core competence is better than the others. This will further increase the benefit of market diversification, as each of the potential markets would be exploited deeper when firms have stronger core competence or distinctive capabilities (Lei, Hitt, and Bettis, 1990; Hamel,1991). Thus, we can obtain the following hypothesis:

> ***H3*** *Technology depth improves the relationship between market diversification and performance.*

Empirical Design

Sample and Data source

We use all the Chinese ***SADI small giant*** firms as our sample to test our hypothesis. In 2016, the Chinese government first proposed the aim of selecting and cultivating a large number of small firms that are specialized, advanced, differentiated, and innovative in each province, and launched a series of policies aiming to foster the development of those ***SADI*** firms. Then, each year between 2018 to 2022, the government selected some top-tier SADI firms from each province as the ***"small giant"*** firms, which must meet the requirements of innovativeness and lies in certain industries that are important for advancing core technology[1].

The detailed information about those ***"SADI small giant"*** firms was collected by one of the famous Chinese data platforms, CV source, including basic information like firms' names, registered locations, belonging industries, and also the investment information including the investors, the investment amount in each round, and the evaluated market value of the firms. Meanwhile, we also need the records of firms' exporting activities to capture their market scope. Due to this reason, we use the Chinese Import and Export Trade data collected by the Chinese General Administration of Customs to capture the number of firms' different markets firms have engaged. Besides, we also include the records from the Chinese patents data, this helped us to identify the patents each firm has ever been granted.

Measures of Main variables

The dependent variable, ***Performance*** is measured based on the estimated firm value. We first calculate the industry mean of all the firms within the same industry each year, and also the standard deviation. We then scaled focal firms' estimated value by first deducting the mean and then dividing it by the standard deviation. The final results reflect the level at which the focal firm was ranked within the same industry each year. ***Product diversification.*** It is unable to directly observe firms' products. We depict the level of product diversification by firms' patents in the utility-patents category. ***Market diversification.*** Following previous literature (Delios and Beamish, 1999, Lu and Beamish, 2001, Lu and Beamish, 2004), this variable is measured by the number of different countries to which the focal firm sells its products. ***Investor***

[1] For more details about the procedure of selecting "small giant" firms, please visit https://www.miit.gov.cn/jgsj/qyj/gzdt/art/2020/art_dbb5685c77744605bf865ccdfba7f4a8.html

diversity is measured by the number of different institutions that have ever invested in the focal firm. ***Technology depth*** is measured by the average of mean-adjusted times firms' invention patents have been cited.

Control variables. All the variables that may influence firms' financial performance should be controlled, including ***firm size***, measured by the logarithm of its total assets; ***firm age*** measured by deducting the established year from the observed year; ***capital structure*** measured by the industry-year adjusted leverage ratio; and ***technological capability*** measured by the total invention patents the firm has been granted. Meanwhile, a series of dummy variables were added, including ***location*** (equals to 1 if firms are located in first-tier cities); ***public-listed*** (equals to 1 if the firms have been publicly listed before the observation year); state-owned (equals to 1 if the firm contains some state shares. Moreover, a series of year dummies were added to exclude the influence of the macroeconomic environment.

Methods of Analysis

We use the 2SLS method with the industry-year mean as the instrument variable to conduct the regression. To avoid the possibility of reverse causality problems, all the independent variables, control variables, and moderators were lagged by 1 year.

Potential Contribution

Based on the dilemma Chinese Hidden Champions faced in their development process (i.e. the trade-off between market expansion and cost control). We tried to 1) explore whether diversification strategy serves as an efficient tool to maintain their sales revenue and ensure continuous investment in R&D activities; 2) find out different conditions under which the tacit of product diversification or market diversification is more advantageous than the other.

Our research aimed to make contributions in the following ways. First, we contribute to the literature about diversification strategy, previous literature about diversification

mainly focused on large firms that are more profitable and can bear the increased costs of diversification, while few of the research discussed the situation where it is

indispensable for small-and-medium-sized firms to diversify. Second, we contribute to the literature about Hidden Champions among which empirical findings about recent Chinses samples are scant (Schenkenhofer, 2022). Based on the SADI firms selected by the Chinese government, we discussed the way by which they could maintain the specificity and improve their potential value simultaneously.

Table 1 Planned Schedule for fulfilling the manuscript

2022-10-01~2022-11-30	literature review and data collection
2022-12-01~2022-12-31	data screening
2023-01-01~2023-02-28	data analysis and regression
2023-03-01~2023-04-30	initial manuscript writing
2023-05-01~2023-06-30	manuscript revising and submitting

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The Role of State Capitalism in Explaining Cross-border Acquisitions and Performance of Emerging Market Multinationals: Evidence from China

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Extended Abstract

This paper examines the impact of state capitalism diversities on cross-border acquisitions-performance relationships of emerging market multinationals. By combining propensity-score matching and difference-in-difference (DID) approaches to control the self-selection in engaging in cross-border mergers and acquisitions (CBMAs), we find that different levels of state-owned-enterprises (SOEs) can exhibit distinct effects of CBMAs on their productivity. Specifically, higher the government levels, lower the positive effect of CBMA on EMNE's productivity, and this contingent effect is also dependent on SOEs' endogenous resources on financial slack, political connection and absorptive capacity, and exogenous regional marketization levels.

Keyword: State capitalism, Cross-border acquisitions, Government affiliation, Political connections, Total factor productivity

1. Introduction

IB literature have long noted the phenomena that EMNEs have engaged in aggressive CBMAs to seek strategic assets to build up global competitive advantages (Luo and Tung, 2007; Peng et al., 2009). Extant literature has emphasised the importance of institutions in shaping CBMA-performance relationship of EMNEs, they tend to either focus on institutional support from government ownership (Du and Boateng, 2015; Tu et al., 2021) or home-host institutional distance (Liou et al., 2016) in

determining post-CBMA performance. Although institutions matter, these studies approach institution as a unidimensional factor that limited to oversimplified dichotomy of government ownership such that our understanding on the variations of state intervention is rather thin (Jackson and Deep, 2008; Li et al., 2014). In fact, there are significant differences in the levels or hierarchical ranks of governments such that central, provincial and city-level SOEs may adopt qualitatively different strategies to create values from internationalization (Wang et al., 2012; Zhou et al., 2017). Thus, to fill the gap, this paper draws from state capitalism perspective to unfold the diversity among SOEs affiliated with different levels of government in explaining the relationship between cross-border acquisitions and firm performance in emerging markets.

Moreover, we further reveal the mechanisms through which affiliated government levels of SOEs could influence the effect of CBMA on their performance. Our analysis demonstrates that the effect of government affiliation level on CBMA-performance link depends on the firm capabilities on presence of political connection, financial slack and absorptive capacity, and regional levels of marketization.

2. Hypothesis and framework

We hypothesize that higher government levels of SOEs will experience lower productivity gains from CBMAs than SOEs with lower government levels. Higher-level governments may have qualitatively different objectives or motives for conducting CBMAs from lower-level governments. Central SOEs largely operating as policy instruments and hold privileged monopoly positions mainly internationalize to serve national oriented goals on enhancing global competitiveness (Li et al. 2014; Wang et al., 2020). In contrast, SOEs with lower government levels face less institutional pressure and could align their businesses goals with the objectives of local government to generate values from engaging in CBMAs. Hence:

Hypothesis 1: Government level negatively moderates the effect of CBMA on EMNE's productivity as such the positive effect of CBMA on productivity is weaker for EMNEs affiliated with higher government levels than those with lower government levels.

We also construct the following moderated effects on affiliated government levels of SOEs. Since government level itself represents a form of political ties, the presence of politically connected directors in SOEs may have an institutional substitution effect on CBMA-productivity link. Hence,

Hypothesis 2: Political connection weakens the negative moderating effect of government levels on the relationship between CBMA and EMNE's productivity.

Firm's significant financial slack may increase the likelihood to misuse the financial resources when bidding for targets and managing post-CBMA integration process, leading to worse post-CBMA performance. We argue that this phenomenon would be more severe for SOEs with higher government levels as they have access to more external financial resources from higher-level governments. Hence,

Hypothesis 3: Financial slack enhances the negative moderating effects of government levels on relationship between CBMA and firm productivity.

Firms with higher absorptive capacity are more likely to create values from coordinating resources after acquisitions and we hypothesize that the negative impact of government levels on CBMA-performance link will be alleviated for firms with higher absorptive capacities.

Hypothesis 4: Absorptive capacity weakens the negative moderating effects of government levels on relationship between CBMA and firm productivity.

The negative effect of SOE's affiliated government level is stronger in subnational regions with lower marketization level than in regions with higher marketization level.

Hypothesis 5: Regional marketization level weakens the negative moderating effect of government levels on the relationship between CBMA and EMNE's productivity.

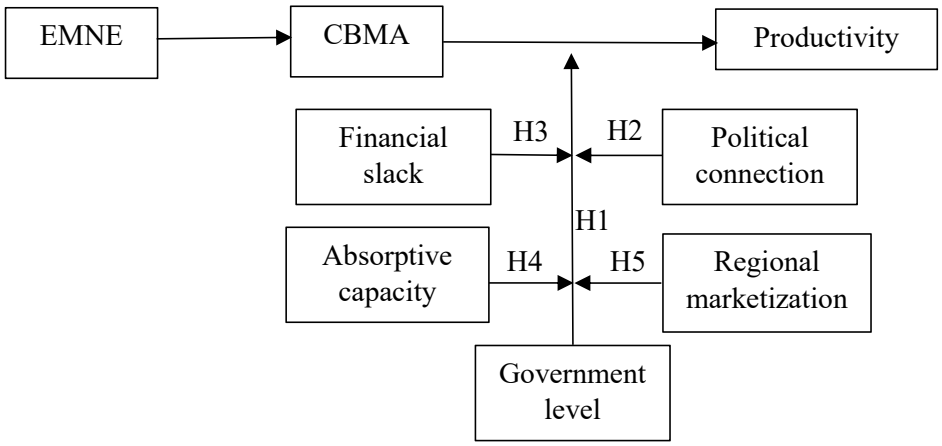

Figure 1 Theoretical framework

3. Methodology and results

First, we adopt Levinsohn-Petrin estimations to calculate firm's total factor productivity (TFP) (Levinsohn and Petrin, 2003). The capital and labor are captured by net fixed assets and the number of employees. Output is measured by operating revenue. TFP is calculated for each firm during 2011-2019. The firm financial data is collected from WIND database. The descriptive statistics are shown in Table 1.

$$LnY_{it} = \beta_0 + \beta_l L_{it} + \beta_k K_{it} + \beta_m m_{it} + \omega_{it} + \eta_{it}$$

Second, we employ propensity score matching (PSM) to select the control group for treated firms. $CBMA_{i,t}$ denotes whether the firm i engaged in an CBMA transaction in year t (ranges from 2012-2019), and $X_{i,t-1}$ denotes characteristics of firm i in year t – 1, which include TFP, labor, capital, overseas sales, R&D expense, cash holdings, ROA of firms one year before CBMA, and dummies for state ownership, industry and province. We collect CBMAs data from CSMAR. The matching process is implemented year-by-year using lagged covariates. We perform a Logit model with 3-nearest-neighbor matching method. In total, our sample include 226 CBMA firms and 354 non-CBMA firms. Table 2 clearly shows that the pre-acquisition differences between two groups after match have been significantly reduced.

$$\Pr(CBMA_{i,t}=1) = F(\beta(X_{i,t-1}))$$

$$\beta(X_{i,t-1}) = \beta_o + \beta_1 TFP_{i,t-1} + \beta_1 Age_{i,t-1} + \beta_1 \ln(Labor_{i,t-1}) + \beta_2 \ln(Capital_{i,t-1}) + \beta_3 \ln(Overseas\ Sales_{i,t-1}) + \beta_4 \ln(R\&D\ expense_{i,t-1}) + \beta_5 \ln(Cash_{i,t-1}) + \beta_6 ROA_{i,t-1} + state\ ownership + industry\ dummies + province\ dummies + \varepsilon_{i,t}$$

Finally, the difference-in-difference (DID) approach compares productivity changes for the treated group of firms that have conducted CBMAs with the relevant control group of firms that have not conducted CBMAs. The DID estimator will be estimated from the following equation using data on acquired firms and non-acquired firms. As shown in the following equation, post_CBMA is a

dummy variable that is equal to one for the periods after the firm has conducted CBMA, and zero otherwise. Hierarchy equals to 1 if the SOE is affiliated with city government, 2 if affiliated with provincial government and 3 if affiliated with central government, η_i refers to industry, province and year fixed effects. The estimated DID effect of a CBMA for productivity is given by β.

$$\text{Ln}(\text{TFP}_{i,t}) = \beta \text{post\_CBMA}_{i,t} + \eta_i + \varepsilon_{i,t}$$

Table 1. Descriptive statistics

Variables	N	Mean	SD	Max	Min
1. Operating revenue (in logs)	24400	20.90	1.50	27.55	0
2. Labor (in logs)	23659	7.35	1.24	12.50	0.69
3. Capital (in logs)	19102	19.90	1.59	25.65	9.03
4. TFP (in logs)	15892	2.29	0.20	2.97	1.73
5. Hierarchy	5310	1.89	0.78	3	1
6. Age (in logs)	28890	2.89	0.35	4.16	1.10
7. Overseas sales (in logs)	17418	18.69	2.26	25.48	7.49
8. Tangible assets ratio	22098	0.87	0.23	1.280	-1.87
9. Capital intensity	19052	12.46	0.96	17.14	2.92
10. Leverage	24378	0.42	0.50	46.16	0
11. R&D intensity	23117	0	0.08	0.09	0
12. Cash holdings (in logs)	24261	19.23	1.57	25.52	7.42
13. High cash holdings	28890	0.58	0.49	1	0
14. High marketization level	28890	0.51	0.50	1	0
15. Political connection	16929	0.33	0.47	1	0
16. ROA	24291	0.07	0.21	20.79	-16.11
17. Ownership	26290	5.84	2.00	8	1
18. Foreign ownership	28890	0.04	0.20	1	0
19. State ownership	28890	0.19	0.39	1	0

Notes: We define a firm with high financing slack if its cash holding is higher than the overall median. We define a firm with high absorptive capacity if its R&D intensity is higher than the overall median. We measured provincial marketization level based on the marketization index of Chinese provinces developed by Fan and colleagues (Fan, Wang, & Zhu, 2011). We define a province with high marketization level if its index is higher than the median. Data source: WIND.

Table 2. Balance tests

	Unmatched (mean TFP)			Matched (mean TFP)			No. of	No. of	No. of
Year	Treated	Control	p value	Treated	Control	p value	treated	control	matched
2012	2.240	2.201	0.003***	2.230	2.233	0.962	12	283	21
2013	2.242	2.203	0.004***	2.209	2.244	0.585	10	237	19
2014	2.266	2.230	0.003***	0.266	2.238	0.316	27	586	65
2015	2.263	2.238	0.003***	2.240	2.230	0.656	37	736	101
2016	2.300	2.277	0.050**	2.296	2.318	0.564	34	1008	86
2017	2.307	2.296	0.294	2.309	2.319	0.710	37	1027	87
2018	2.362	2.357	0.718	2.417	2.414	0.957	25	1016	67
2019	2.352	2.377	0.062*	2.347	2.373	0.632	21	774	52

Notes: *, **, and *** statistical significance at 10%, 5% and 1% levels, respectively (two-tailed tests).

Table 3. Empirical results

	Full Sample	Government levels	With political connection	Without political connection	High financial slack	Low financial slack	High absorptive capacity	Low absorptive capacity	High-marketization	Low-marketization
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
Post_cbma	0.008	0.072***	0.049	0.073***	0.062**	0.101*	0.069***	0.407***	0.04	0.076**
	(0.01)	(0.02)	(0.05)	(0.03)	(0.03)	(0.06)	(0.02)	(0.10)	(0.05)	(0.03)
Hierarchy*Post_cbma		-0.025**	-0.02	-0.027*	-0.022*	-0.031	-0.022**	-0.166***	-0.014	-0.028**
		(0.01)	(0.02)	(0.01)	(0.01)	(0.03)	(0.01)	(0.04)	(0.04)	(0.01)
Hierarchy		0.007	0.062***	-0.007	0.001	-0.012	0.006	0.063	-0.009	0.021**
		(0.01)	(0.02)	(0.01)	(0.01)	(0.03)	(0.01)	(0.06)	(0.01)	(0.01)
Age	-0.040***	0.031	-0.02	0.068**	0.029	-0.099	0.033	0.672	0.035	0.073*
	(0.01)	(0.02)	(0.06)	(0.03)	(0.03)	(0.07)	(0.03)	(0.60)	(0.04)	(0.04)
Overseas sales	-0.001	-0.003	0.020***	-0.007	-0.003	0.013	-0.002	-0.006	0.001	-0.004
	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)	(0.01)	(0.00)	(0.00)
Tangible ratio	-0.000*	-0.002**	-0.003***	-0.001	-0.002	-0.003*	-0.004***	0.000	-0.003**	-0.002
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Capital intensity	-0.006	-0.002	0.025	-0.016	-0.007	-0.046*	-0.013	-0.018	-0.019	0.004
	(0.00)	(0.01)	(0.02)	(0.01)	(0.01)	(0.03)	(0.01)	(0.03)	(0.02)	(0.02)
Leverage	-0.102***	-0.015	-0.063	0.006	0.001	-0.123	-0.000	-0.001	0.023	-0.047
	(0.02)	(0.04)	(0.06)	(0.06)	(0.04)	(0.13)	(0.00)	(0.00)	(0.05)	(0.06)
R&D intensity	0.441***	0.626***	0.186	0.467*	1.305***	0.26	0.619***	1.564	0.675**	0.629***
	(0.06)	(0.22)	(0.46)	(0.25)	(0.41)	(0.18)	(0.22)	(1.33)	(0.34)	(0.24)
ROA	1.112***	1.631***	1.284***	1.638***	1.647***	1.253***	1.668***	1.115***	1.513***	1.623***
	(0.08)	(0.14)	(0.33)	(0.16)	(0.15)	(0.29)	(0.14)	(0.33)	(0.16)	(0.20)
Industry fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Province fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Constant	2.378***	2.144***	1.475***	2.320***	2.208***	2.821***	2.320***	0.373	2.310***	1.945***
	(0.07)	(0.21)	(0.36)	(0.27)	(0.24)	(0.63)	(0.23)	(1.76)	(0.29)	(0.33)
N	3719	689	211	477	524	165	557	132	213	476
R-squared	0.513	0.665	0.798	0.690	0.659	0.813	0.660	0.813	0.753	0.662

Notes: Standard errors in parentheses. *, **, and *** statistical significance at 10%, 5% and 1% levels, respectively (two-tailed test

4. Conclusion

From Table 3, Model 2 shows the negative interacted term of government hierarchy of SOEs and post-CBMA variable at 5% level, which supports Hypothesis 1. From Model 3&4, the interacted term is negative and significant for firms with significant financial slacks than for those with lower financial slacks, which supports Hypothesis 2. Similarly, Model 5&6 support the Hypothesis 3, Model 7&8 support Hypothesis 4, and Model 9&10 support Hypothesis 5.

This paper contributes to the existing literature in the following ways. First, our analysis advances our understanding of the effect of state capitalism on firm performance. Our finding that different levels of government affect the CBMA-performance relationship significantly suggests that institutional reforms change behaviours and strategies of SOEs on engaging in CBMAs. Second, it contributes to studies that have examined how government ownership affects firm post-CBMA performance. This paper challenges extant studies' underlined assumption that all SOEs are the same in gaining values from CBMAs. Third, it reveals the effect of affiliated government hierarchies influence on post-CBMA performance varies across firms with heterogeneity resources and regions.

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Paper Number: MS0094

Influence of cultural distance on the development of Cross-border e-commerce

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Influence of cultural distance on the development of Cross-border e-commerce

Numerous academics have concentrated on the unique connection between cultural distance and cross-border e-commerce.We selected 53 nations as the object of our empirical study using Hofstede's six cultural dimensions to create cultural distance and we discovered that it had an S-shaped effect on cross-border e-commerce.In order to further analyze the influence brought by cultural distance in each dimension,we replaced the total dimensional cultural distance variable with the six dimensional cultural distance variable.Through stepwise regression,we conclude that the cultural distance of PDI (Power Distance) and IVR (Indulgence and Restraint) between countries plays a role in promoting the development of cross-border e-commerce enterprises.The cultural distance of LTOWVS (Long-term versus Short-term) and UAI (Uncertainty Avoidance) will hinder the export and development of cross-border e-commerce to a certain extent ,while IDV (Individualism versus Collectivism) and MAS(Masculinity versus Femininity) will not have a significant impact.

Paper Number: MS0095

A Cross-country Analysis of Corporate Carbon Performance: an International Investment Perspective

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A cross-country analysis of corporate carbon performance: an international investment perspective

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Abstract

In this study, we examine corporate carbon performance globally from the perspective of country-level dispersion. The average carbon performance of listed companies in the non-OECD countries increases more after the Paris Agreement than that of listed companies in the OECD countries. However, under an increasing trend of average country-level carbon performance, the dispersion of corporate carbon performance is reduced more in the OECD countries vis-à-vis the non-OECD countries. In addition, international equity ownership is negatively associated with the dispersion of country-level corporate carbon performance in the post-Paris Agreement period. This finding supports our conjecture that sophisticated foreign investors from developed countries exert a significant positive influence on the carbon management efficiency of domestic firms in developing countries.

Keywords: ESG, Carbon Performance, International ownership, OECD

1. Introduction

According to Generation Investment Management (2021), 40% of greenhouse gas emissions are emitted by publicly listed companies in the global market. Accordingly, listed companies play a crucial

role in limiting global temperature rise, i.e., the main goal of the Paris Agreement. Following the recent direction of financial research, our study goes beyond carbon emission analysis by relating corporate performance in managing carbon to international investments in equity ownership of listed firms globally. Unlike previous studies that focus on the individual firm's carbon emissions (e.g., Azar et al., 2021), we employ corporate carbon performance to construct country-level efficiency of corporate carbon management efficiency based on a sample of 20,712 listed firms and 91,884 firm-year observations from 64 countries. Specifically, the efficiency of carbon management is measured by the dispersion of corporate carbon management scores from the MSCI database, following the spirit of previous studies[1] (e.g., Acemoglu and Dell, 2010; Chancel and Piketty, 2015). We investigate the changes in carbon management performance in 31 OECD vis-à-vis34 non-OECD countries before and after the Paris Agreement.

2. Literature review and hypotheses development

According to the *stakeholder* and the *natural resources* theories (Donaldson, 1995; Hart, 1995) corporations engaging in environmental issues should experience multifaceted benefits. However, empirical evidence on the benefits of enhanced carbon emissions is inconclusive. In a global study, Lewandowski (2017) find that improved carbon performance hurts firms' stock market performance. On the contrary, e.g., Choi and Luo (2021) show that corporate carbon emissions have a significantly negative effect on the stock market performance of the 500 largest corporations from 28 countries.

In general, empirical studies confirm a positive relationship between proactive board actions and carbon disclosure and performance (e.g., Peters and Romi, 2014; Ben-Amar and McIlkenny, 2015). Other studies examine board characteristics and gender diversity (e.g., Haque, 2017; Nuber and Velte, 2021), and environmental effort at the board level (e.g., Haque and Ntim, 2022) and show their positive effect on carbon performance.

[1] We interpret the reduction in the variation in corporate carbon performance (while the average carbon performance increases) as an improvement in the efficiency of carbon management in a country (see Abiad et al., 2008). Another possibility is that firms' carbon management in a country may deteriorate, which also leads to a lower dispersion of corporate carbon performance scores. However, this possibility can be ruled out as corporate carbon performance is increasing over time in most developed and developing countries.

Scholars tend to agree that firms willing to improve their CO2 emissions and performance face different costs, barriers and incentives when operating in industrialised versus in developing countries. Such differentiations can be attributed to e.g., the usage of fossil fuels vis-à-vis green sources of energy (Welsby et al., 2021), technological progress (Milindi and Inglesi-Lotz, 2022), environmental regulation (Jeswani et al., 2008), institutional quality (Danish and Ulucak, 2020), and urbanization (Poumanyvong and Kaneko, 2010). Moreover, corporations from industrialized countries with stringent environmental regulations have been "*outsourcing*" carbon emissions to upstream and downstream firms in developing countries along the global supply chain (e.g., King and van den Bergh, 2021; Singhania and Saini, 2021).

In 2016, 196 countries signed the Paris Climate Agreement in a global effort to limit global warming to well below 2°C and preferably to 1.5°C (UNFCCC, 2022). Andersson et al. (2016) argue that the Paris agreement is built on a bottom-up approach with the support of various economic actors and private projects like the PDC (*Portfolio Decarbonization Coalition)*. Bolton and Kacperczyk (2022) show that in the follow-up to joining major global disclosure systems such as the CDP (*Carbon Disclosure Project*) and the SBTi (*Science-Based Targe*t *Initiative*), corporations decrease CO2 emissions. However, although external pressure to embrace climate change efforts has been growing, corporations have been slow to decrease their emissions (e.g., Lewandowski, 2017; Slawinski et al., 2017).

Flammer et al. (2021) find that the environmentally oriented long-term institutional investors have the strongest positive effect on corporates' disclosure of their climate change risks. Bolton and Kacperczyk (2021, 2022) show that institutional investors employ an exclusionary screening strategy toward the industries with the heaviest direct CO2 emissions intensity. Krueger et al. (2020) report that 29% of 439 institutional investors make efforts to decrease their portfolios' CO2 footprint, with risk management and active engagement (divestment) being the most (least) popular strategies. On the other hand, Basse Mama and Mandaroux (2022) document that European institutional investors are more likely to divest from than engage with the highest carbon emitters. On a similar note, international mutual funds display a substantial aversion toward carbon-intensive corporations (Benz et al., 2021).

Listed firms are motivated to reduce carbon emissions after the Paris Agreement because of the actions adopted by governments (e.g., mandatory disclosure of carbon emissions by exchanges) and

pressures from investors (Benz et al., 2021; Bolton and Kacperczyk, 2022). Thus, we expect that a majority of firms exerting efforts to reduce carbon emissions after the Paris Agreement will lead to a lower dispersion of corporate carbon performance. This leads us to the first hypothesis.

H1: *The dispersion of corporate carbon performance is reduced after the Paris Agreement.*

Developing countries may face more challenges in mitigating carbon emissions because they ought to pay more attention to economic development, which, in turn, increases energy demand and carbon emissions (Kobayakawa, 2022). Furthermore, compared to firms from industrialized countries, firms from developing countries experience greater costs, more barriers, and fewer incentives when trying to reduce CO2 emissions (e.g., Cadez et al., 2019). This leads us to the second hypothesis.

H2: *The dispersion of corporate carbon performance is reduced less in developing countries after the Paris Agreement.*

Foreign institutional investors can drive local firms to foster long-term investment (Bena et al., 2017), and improve the quality of corporate governance (Aggarwal et al., 2011) and ESG (Dyck et al., 2019). Azar et al. (2021) document a significant association between institutional investors' pressure and their investees curbing carbon emissions. This effect is significantly stronger in recent years when these institutions committed to environmental issues. This leads us to the third hypothesis.

H3: *The dispersion of corporate carbon performance is reduced more in the countries with a large prevalence of foreign ownership after the Paris Agreement.*

International equity investments from developed countries exert significantly beneficial financial effects such as higher growth, investment, profitability, and efficiency, whilst lower leverage and cost of equity financing (e.g., Mitton, 2006; Errunza and Ta, 2015). This leads us to the first hypothesis.

H4: *The dispersion of corporate carbon performance is reduced more in developing countries with a large prevalence of foreign ownership.*

3. Method and Results

The data on corporate carbon management were collected from the MSCI ESG Intangible Value Assessment (IVA) database. Specifically, MSCI calculates a listed firm's exposure to carbon emissions

risk and its performance to manage carbon risk. The MSCI's carbon emissions score ranges from 0 to 10 where 0 (10) indicates very poor (very good) performance[2]. The final sample consists of 20,712 listed firms and 91,884 firm-year observations from 64 countries[3] covering the 2010-2020 period.

We use the listed firms' MSCI carbon emissions scores to calculate the average corporate carbon emissions score in a country in a year (*CARBON*). We measure the annual efficiency of carbon management in a country by the dispersion of corporate carbon performance scores of listed firms in that country using two inequality indices: the Theil index (*THEIL*) and the mean logarithmic deviation (*MLD*) index as proxies of the dispersion. If listed firms in a country all improve carbon performance, naturally this dispersion decreases. In our analysis, a smaller value of the inequality indices represents a higher efficiency to improve carbon performance in a country.

We divide the sample period into two subperiods, namely before (2010-2015) and after the passing of the Paris Agreement (2016-2020). Accordingly, we employ the binary dummy variable (*PARIS*) equal to one for the period 2016-2020 and zero for the period 2010-2015. Countries in the sample are classified into developed and developing countries, based on whether they belong to OECD. In the untabulated results, we also classify countries according to the income group by the World Bank and find similar results. International investor ownership in a country is measured by the prevalence of foreign ownership (*FOROWN*) from the World Economic Forum Global Competitiveness Index[4]. The index ranges from 1 to 7 where 1 (7) stands for very rare (the highest) foreign ownership. All estimated results are based on the fixed effects regression models.

Our results can be summarized as follows. First, after the Paris Agreement, the average carbon performance of listed companies in the non-OECD countries increases more than that of listed companies in the OECD countries, whereas the dispersion of corporate carbon performance decreases more across the OECD countries vis-à-vis the non-OECD countries. Such results imply that developed countries have larger efficiency to improve carbon performance than developing countries after the passing of the Paris Agreement. Second, foreign investor ownership is negatively associated with the

[2] The details of the carbon emissions score are given in Appendix 3.
[3] We require that each country has at least 30 listed firms. The full list of 64 countries is provided in Appendix 1.
[4] See Appendix 2 for the full list of employed variables and their definitions.

dispersion of corporate carbon performance in the post-Paris Agreement period. This finding, in turn, is consistent with previous studies that foreign investors play a significant role in improving corporate governance, ESG performance and carbon performance of domestic firms (Aggarwal et al., 2011; Bena et al., 2017; Dyck et al., 2019; Azar et al., 2021). Third, the decrease in the dispersion of corporate carbon performance after the Paris Agreement is larger in non-OECD countries than in OECD countries. In sum, this study shows that more sophisticated foreign investors from developed countries exert significant influence on domestic firms from developing countries in improving their efficiency of carbon management. Thus, our study brings additional insight into the carbon literature by employing a unique combination of carbon management data and the dispersion (Theil index) approach to measure corporate carbon management efficiency within a country in a global approach.

4. Tables[5]

Table 1: Paris Agreement and the dispersion of corporate carbon performance

	(1)	(2)	(3)	(4)
Dep. Var. = THEIL	All	OECD	Non-OECD	All
PARIS	-0.006	-0.012	0.005	
	(-1.71)*	(-1.98)**	(1.00)	
NONOECD * PARIS				0.028
				(3.87)***
Country Fixed Effect	Yes	Yes	Yes	Yes
Year Fixed Effect	No	No	No	Yes
N	637	338	299	637
R-squared	0.4036	0.3155	0.5542	0.4474

***1%, **5%, *10%. The t-statistics reported in parentheses are estimated from robust standard errors.

[5] In the models, we include several country-level control variables (see Appendix 2) other than those directly involved in hypotheses. For the sake of brevity, they are not presented.

Table 2: the effect of foreign ownership on the dispersion of corporate carbon performance before and after the Paris Agreement

	(1)	(2)	(3)	(4)
Dep. Var. = THEIL	All	PARIS=0	PARIS=1	All
FOROWN	-0.002	0.012	-0.028	0.002
	(-0.27)	(0.87)	(-2.58)**	(0.24)
FOROWN * PARIS				-0.009
				(-2.05)**
Country Fixed Effect	Yes	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes	Yes
N	637	319	318	637
R-squared	0.4336	0.4713	0.8250	0.4368

***1%, **5%, *10%. The t-statistics reported in parentheses are estimated from robust standard errors.

Table 3: the effect of foreign ownership on the dispersion of corporate carbon performance in the OECD and non-OECD countries

	(1)	(2)	(3)
Dep. Var. = THEIL	All	PARIS=0	PARIS=1
FOROWN	0.006	0.011	0.004
	(0.68)	(0.56)	(0.42)
FOROWN * NONOECD	-0.020	0.001	-0.038
	(-1.90)*	(0.04)	(-4.01)***
Country Fixed Effect	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes
N	637	319	318
R-squared	0.4370	0.4713	0.8411

***1%, **5%, *10%. The t-statistics reported in parentheses are estimated from robust standard errors.

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6. Appendices

Appendix 1: the list of countries/economies in the cross-country analysis

OECD Country/Economy:		Non-OECD Country/Economy:	
Australia	Korea, Rep.	Argentina	Pakistan
Austria	Luxembourg	Brazil	Peru
Belgium	Mexico	China	Philippines
Canada	Netherlands	Cote d'Ivoire	Puerto Rico
Chile	New Zealand	Cyprus	Qatar
Czech Republic	Norway	Egypt	Romania
Denmark	Poland	Hong Kong	Russian
Finland	Portugal	India	Saudi Arabia
France	Slovak Republic	Indonesia	Singapore
Germany	Spain	Kazakhstan	South Africa
Greece	Sweden	Kenya	Sri Lanka
Hungary	Switzerland	Kuwait	Thailand
Ireland	Turkey	Malaysia	Tunisia
Israel	United Kingdom	Malta	Ukraine
Italy	United States	Mauritius	United Arab Emirates
Japan		Morocco	Zambia
		Nigeria	
Total:	31	Total:	33

Appendix 2: variable definitions

Variable	Definition
CARBON	Average corporate carbon emissions score in a country in a year
THEIL	Theil L index, measuring inequality of carbon performance in a country in a year
MLD	MLD index measures inequality of carbon performance in a country in a year
PARIS	Dummy variable, equal to one for years after 2015 and zero otherwise
NONOECD	Dummy variable for non-OECD countries
FOROWN	The prevalence of foreign ownership in a country in a year, ranging from 1 to 7
LNGHS	Natural log of total greenhouse gas emissions in a country in a year
RENEW	The ratio of renewable energy consumption to total final energy consumption in a country in a year
MCAPGDP	The ratio of the market cap of listed firms to GDP in a country in a year
LNINDUVAL	Natural log of industry value-added in a country in a year
TRADE	The ratio of trade to GDP in a country in a year
GDPGROWTH	GDP growth rate in a country in a year
LNGDPPER	Natural log of GDP per capita in the current US dollar in a country in a year

Appendix 3: MSCI ESG Key Issue Hierarchy

The following table is extracted directly from P.4 of the Executive Summary of MSCI ESG Ratings Methodology. This table lists out a total of 35 ESG key issues, which are classified into 10 themes and three pillars. For simplicity, we reproduce the key issues under the environment pillar. For this pillar, there are four different themes and 13 key issues as listed below. Carbon Emission is one of the key issues under this pillar.

Pillar	**Themes**	**ESG Key Issues**	
Environment	Climate Change	Carbon Emissions Product Carbon Footprint	Financing Environmental Impact Climate Change Vulnerability
	Natural Capital	Water Stress Biodiversity & Land Use	Raw Material Sourcing
	Pollution & Waste	Toxic Emissions & Waste Packaging Material & Waste	Electronic Waste
	Environmental Opportunities	Opportunities in Clean Tech Opportunities in Green Building	Opportunities in Renewable Energy

Key Issue Assessment: The MSCI ESG rating model measures both risk exposure and risk management. Risk exposure is scored on a 0-10 scale. The rating reflects whether a company has developed strategies and demonstrated a strong track record of performance in managing its specific level of risks or opportunities. While Key Issues are first measured quantitatively in each industry, each firm's exposure to each issue varies. Therefore, MSCI ESG Ratings compute firm-level exposure to key ESG risks based on a detailed breakdown including business segments, operation locations, and reliance on outsourced production or government contracts. To rank high on a Key Issue, management needs to perform according to the level of exposure. In other words, a company with high exposure is expected to have very strong management. Therefore, a highly exposed company with poor management will score worse than a company with the same management practices but with lower ESK risk exposure. On the other hand, a company with limited exposure can have a more modest approach to receive the same rating.

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Unmasking the Indirect Pollution Haven Effect:How the Presence of MNEs Impacts Local Firms' Environmental Performance

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Unmasking the indirect pollution haven effect:

How the presence of MNEs impacts local firms' environmental performance

Abstract

Pollution haven studies have been focusing on the perspective of MNEs from stringently-regulated countries and investigating these MNEs' pollution haven behaviors. While the literature has identified direct pollution haven channels the focal firms tend to adopt, there may be also indirect pollution haven effect for the non-focal firms, which has not been studied. Based on institutional arbitrage and pollution haven literature, we investigate how the presence of foreign firms leads to the deterioration of local firms' environmental performance in China. Using a sample of Chinese listed firms with matched FDI source information for the years 2009-2015, we find that the presence of MNEs have a negative impact on local firms' environmental performance. Such indirect pollution haven effect is stronger if foreign firms come from the home country with more stringent environmental standards, and also stronger if the foreign firms set up their subsidiaries along the two sides of value chain. Moreover, the indirect pollution haven effect is weaker if local firms have better financial performance. We also find the partial mediation effect of the number of industrial clusters on the relationship between the presence of MNEs and local firms' environmental performance. These findings shed new light on pollution haven studies and suggest that previous work may underestimate the pollution haven by focusing on the direct effect while ignoring the indirect effect.

Keywords: pollution haven; environmental performance; FDI; value chain

"For better or for worse, corporations are more involved than ever in how the world handles the climate crisis" – TIME

INTRODUCTION

The climate change is widely considered as one of the biggest threats the world is facing nowadays (World Economic Forum, 2019[1]). Given the resource and capability advantage and exposure across countries, multinational enterprises (MNEs) are at the forefront to tackle the environmental issues. However, MNEs have been criticized by taking advantage of pollution havens to contribute pollution in the host country, that is leveraging their global operation advantage to (re)locate their polluting industries in countries with lax environmental standards or weak enforcement (Aragon-Correa, Marcus, & Hurtado-Torres, 2016; Christmann & Taylor, 2001; Dowell, Hart, & Yeung, 2000).

Prior studies that investigated the pollution haven (PH) effect have identified two main channels to explain why and how MNEs were active to pursue those "pollution havens". Li & Zhou (2017) found that U.S. firms reduce their pollution to meet the U.S. pollution standards through redesigning their supply chain to locate more polluting production in low-wage countries. Furthermore, based on U.S. importing data across different manufacturing industries, Berry, Kaul, & Lee (2021) revealed that the strict environmental regulations lead U.S. firms to offshore the polluting activities through sourcing products from unrelated third parties which are usually poorer countries with laxer environmental standards. Both papers greatly contributed

[1] World Economic Forum, 2019, https://www.weforum.org/agenda/2019/01/biggest-global-risks-facing-our-world/

to the understanding of the Pollution Haven Hypothesis (PHH) from the home country perspective. However, the impact of foreign investment on local firms' environment performance is largely neglected (Li & Zhou, 2017).

As the environmental issue needs to be tackled through the global effort (Li & Zhou, 2017), it is important to understand the effect of PH not only from the perspective of MNE home countries but also from the host countries. With the increasing pressure from legal and regulatory requirements and tightening scrutiny of social media and activists at the host country (Liou & Rao-Nicholson, 2021), the environmentally unsound practices adopted by MNEs' are now under microscope and are greatly constrained. As a result, MNEs from developed countries may have to reduce their direct engagement in PH through offshore manufacturing (Li & Zhou, 2017) or outsourcing (Berry et al., 2021). Against this backdrop, it is important to investigate whether there could be a potential indirect PH effect from MNEs on local firms at the host country.

This study investigates how the presence of foreign firms impacts on local firms' environmental performance in China. By analyzing the trade-off between the costs and benefits engaging in institutional arbitrage, we argue that due to the rising environmental concern and the stricter environmental scrutiny, MNEs do not directly *offshore* or *outsource* the emissions, because the potential reputation damage and financial loss may not offset the cost MNEs could save from 'escaping' from their strict home country environmental regulation. Instead, they could conduct ***offshore-outsourcing*** by investing in markets where local business ecosystem is capable of

providing MNEs' supporting facility system, and induce the indirect environmental pollution originated in the supporting activities.

We define offshore-outsourcing as MNEs establish foreign subsidiaries to search for and access to local supply chains at the host market (Mudambi & Puck, 2016). Indeed, it has been argued that China has accumulated a vast manufacturing ecosystem providing comprehensive service for foreign firms, and it might be difficult to shift to another location for western MNEs facing the pressure of trade tensions between the U.S. and China (Maidment, 2018). For MNEs which (re) locate subsidiaries in China, they may not directly invest in polluting industries or manufacturing polluting productions. Instead, through MNEs' subsidiaries they could contract a local third-party service provider to support production activities. Through providing supporting activities, local firms may take over the production lines that emit pollution, which consequently influences their environmental performance. In this process, since the negative externality was not produced by the MNE subsidiaries, the indirect PH effect is less exposed to public scrutiny.

We further explore a few conditions that can help tease out our proposed theoretical mechanism. First, if our indirect pollution haven hypothesis holds, we would expect the higher environmental standards are set at the home country, the more pressure would be felt by MNEs to reduce direct engagement in pollution through offshore manufacturing or offshore outsourcing. This strategic change leads to stronger indirect pollution haven effect. Second, among the value chain, manufacturing positioned at the middle bottom end of the value chain is more likely incorporating pollution

activities than the upper-end R&D or lower-end service and sales channels (Hoffman & Ocasio, 2001). If in the host market, foreign subsidiaries are more engaged in R&D or service and sales activities they would create a larger market demand at the host market that urges local firms to provide manufacturing-related support activities and influence local firms' environmental performance. However, local firms are not necessarily engaged in pollution-generating supporting activities, as they will also weigh the advantage and disadvantage of doing so. Local firms with better financial performance usually have more market opportunities, and feel less pressured to provide supporting activities to foreign subsidiaries that might emit pollution. And even if their business is embedded in the foreign subsidiary value chain at local market, they have spare resources and attention to think about how they can develop green technology to neutralize the pollution emit through the manufacturing.

We investigate how the presence of foreign firms across different cities impacts domestic firms' environmental performance between 2009 and 2015 in China. Our study identifying an indirect PH channel MNEs can use as offshore-outsourcing to escape the environmental pressure is a further extension of prior direct PH research through offshoring or outsourcing (Berry et al., 2021; Li & Zhou, 2017). Prior studies emphasize the cost effectiveness of PH through offshoring or outsourcing against the costly pollution prevention practices to comply with strict environmental policies at home. We point out the rising costs of financial loss and reputation damage due to the increasing societal scrutiny (Marquis & Toffel, 2016), which leads MNEs' undirect PH.

Second, prior studies have mainly addressed the PH from the MNE home country perspective (e.g., U.S.), we select to address the PH from the host country (China in our case) through analyzing the impact of foreign subsidiaries established by MNEs across the world on local firms' environmental performance. As our study design is a micro-firm level and integrating both home and host market perspectives, we also can explore the heterogeneity of such indirect PH effect for MNEs from different home countries, and local firms with different characteristics.

Lastly, our study also echoes to the holistic view on MNEs' global value chain by incorporating the potential value creation outside the MNE's legal boundaries, instead of only looking at the sum of final sales or assets (Mudambi & Puck, 2016). Prior studies have been emphasizing the importance of the production factors, such as resources, or low-cost labor in attracting foreign investments, while we bring the support activities local firms can perform as another dimension of the local attractiveness when MNEs decide on their foreign subsidiary location choice. Our additional tests indeed lend empirical support by finding the partial mediation effect of the number of industrial clusters between the relationship between the foreign firms and local firms' environmental performance.

LITERATURE AND HYPOTHESES

Costs and Benefits of Institutional Arbitrage

MNEs could strategically conduct institutional arbitrage and selectively allocate specialized activities to locations with the most conducive institutional context (Ahuja & Yayavaram, 2011; Witt & Jackson, 2016). For example, MNEs enjoy cost

advantages by allocating their manufacturing activities to low-wage countries in Asia and Eastern Europe (Gooris & Peeters, 2016; Manning, Larsen, & Bharati, 2015), or access to technology and high-quality talents in countries with advanced innovation systems (Rosenbusch, Gusenbauer, Hatak, Fink, & Meyer, 2019). The developments in information and communication technologies, enhanced patent rights, and new management systems further enable MNEs to disaggregate their global value chains, with finer-sliced activities carried out in dispersed geographic locations, either offshore internally or through outsourcing and non-equity arrangements (Kano, 2017; Narula & Driffield, 2012).

Except the low cost and high technology as the most common attractiveness at the host country for being part of the global value chain, another location 'advantage' that has been identified is the host country's institutional weakness to save on MNEs' costs of meeting stringent norms and standards at home (Berry et al., 2021). A typical example is the use of PH, that is the (re)location of their manufacturing activities in countries with lax environmental standards (Aragon-Correa, Marcus, & Hurtado-Torres, 2016; Christmann & Taylor, 2001; Dowell, Hart, & Yeung, 2000). Specifically, MNEs could conduct offshore manufacturing (and/or offshore outsourcing through third parties abroad that involve pollution (Berry et al., 2021; Li & Zhou, 2017).

The economic rationale for MNEs to decide in engaging PH approach is the costs of re (location) of polluted activities through value chain to other locations are lower than that of upgrading and re-designing operations to meet the stringent

environmental requirements at home. However, MNEs have been increasingly criticized by the media and NGOs for taking advantage of low environmental standards in developing markets, even when the activities in question were offshore-outsourced and thus took place outside the firms' legal boundaries (Doh, 2005; Mudambi & Puck, 2016). As a result, MNEs have often suffered significant public relations damage with the associated financial costs. Despite the fact that the component elements of the value chain could be external, many stakeholders attribute the outsourced parts of the chain to the MNE (Mudambi & Puck, 2016). If incorporating these reputation damage and additional costs of dealing with these public scrutiny and criticism, MNEs may not foresee any benefit to conduct PH directly through their global value chain.

Lately, scholars in global value chain research have been arguing the importance of analyzing the MNEs' competitive advantage emanating from specialized capabilities of the whole broader external network, including the local business ecosystem that their foreign subsidiaries tap into, which is not reflected directly in the geographical profile of sales and assets (Mudambi & Puck, 2016). When MNEs decide on their locations of foreign subsidiaries, the comprehensive business ecosystem, such as the support activities provided by local firms, has become an additional important feature to attract foreign investments (Maidment, 2018). For example, MNEs choose to set-up IT centers in India not only because of the available talent that could be internalized directly, but also because of the potential to be close to external suppliers (e.g., call-centers and the like) (Mudambi & Puck, 2016). This is consistent with the argument

that significant value is often created through externalized parts of the value chain, which generates the global value creation network (Hinterhuber, 2002; Kedia & Mukherjee, 2009). Following this logic that suggests the increasingly importance of the support activities provided by local firms in the global value chain, we propose that the presence of the foreign firms may pass certain parts of value chain that involve pollution emits to the local firms as a potential indirect PH effect.

The indirect pollution haven hypothesis: the presence of MNEs and local firms' environmental performance

We argue that the indirect PH effect could be explained from two sides. On the side of MNEs, due to the increasing pressure from the scrutiny by the media and NGOs and the concerns over significant reputation and public relations damage (Liou & Rao-Nicholson, 2021), MNEs are motivated to reduce their direct engagement in PH through offshoring and/or outsourcing. Instead, through tapping into the local business ecosystem at the host market, MNEs can indirectly pass the polluting activities through their foreign subsidiaries to local firms providing support activities. Due to the indirect/second-tier linkage through foreign subsidiaries, such indirect PH could be under the radar and not be detected by the media or social activists. At the same time, MNEs are capable to attract local firms to provide supporting activities. Due to the specialized advantages, MNEs can play a focal role in value proposition, which generates value chain opportunities, leading to the construction of business ecosystem (Adner & Kapoor, 2010). For example, the investments from Nokia and Motorola as leading tech firms in mobile phone industry in China had rendered local

firms the business opportunities to assemble handsets and to supply certain components such as printed circuit boards. These supporting activities were at the low end of the mobile phone production value chain, and the localized chain was gradually formulated (Shi, Luo, Hou, Rong, and Shi, 2022). At the local level, it is even found that the ease of doing business across borders has allowed some MNEs to acquire disproportionate power to influence local politics and governance (Fotaki, 2010).

On the other side of indirect PH channel, local firms are motivated to provide such supporting activities for foreign firms to gain economic benefits. First, most supporting activities for MNEs are low value-added and labor-intensive, so that local firms can quickly get started and scale up based on relatively cheap labor and high efficiency advantage in China (Shi et al., 2022). Collaborating with foreign firms at home through value chain has been considered as important way for local firms to gain competitive advantage. Not only increasing the economic benefits, such as sales, immediately, local firms can also improve the innovation capability by learning and accumulating knowledge from foreign firms through the value chain networks (e.g., supplier – customer networks) (Li, Chen, & Shapiro, 2010). Besides, local governments are also encouraging local firms to build up comprehensive support activities in order to attract foreign investments.

Within China, there are competitions across different cities to attract foreign investments. In order to attract foreign investments, local governments are active to establish local business ecosystem, such as business clusters or industrial parks, that

helps develop a strong supporting industry advantage (Manning, Ricart, Rique, & Lewin, 2010). Due to the yardstick competition among local governments, they have the motive to attract more foreign direct investment through lowering environmental standards to increase tax revenues and create employment (Burgess, Hansen, Olken, Potapov, & Sieber, 2011). Though government also concerns about the environment, under the performance appraisal system with economic growth as its priority, local governments mainly aim to promote local economic development, and have formed a ‘‘race to the bottom” competition momentum, resulting in the implementation of environmental regulation policies being less effective than expected (Wu, Li, Hao, Ren, & Zhang, 2020).

In sum, foreign firms provide the market opportunities for local Chinese firms to integrate into global value chains through resource allocation, material processing, and product manufacturing that possibly involve pollution emits. Local Chinese firms are also motivated to leverage these business activities to pursue higher profits and expand their market shares. Furthermore, local government might overlook the indirect pollution heaven channel under the pressure of yardstick competition. Based on these arguments, we propose that:

Hypothesis 1 (H1): The presence of MNEs has a negative impact on local firms' environmental performance.

The heterogeneity of MNEs

We further unpack the mechanism of indirect PH. If our indirect PH hypothesis holds, we would predict that the more stringent environmental standards the home country

has, the more likely the MNEs tend to choose indirect PH channel due to the stronger scrutiny and higher standards the stakeholders adopting to monitor their firms. Prior studies have found that due to the increased production costs, strict environmental regulations at home country have motivated MNEs to move out their activities with pollution to other countries with relatively loose environmental regulations (Xing & Kolstad, 2002; Walter & Ugelow, 1979). The more stringent environmental standards also empower the stakeholders, including customers, employees, social activists, and public media, to monitor and hold firms' environmental practices accountable. Stringent environmental regulation can generate a strong awareness of environmental issues among the public (Antonietti, De Marchi, & Maria, 2017; Li & Zhou, 2017), and the public tends to require their firms' environmental practices to comply with higher standards. It would be of higher possibility that MNEs suffer larger reputation and image loss if they engage in direct PH, when the indirect PH would be more likely to occur.

Hypothesis 2 (H2): The negative impact of the presence of MNEs on local firms' environmental performance would be stronger if these foreign firms come from the home country with more stringent environmental standards.

Similarly, for our indirect PH hypothesis to hold, another necessary condition is the local firms are willing to take over the business activities involved with pollution emits from foreign subsidiaries through providing supporting activities. The value

chain perspective suggests that most of the polluting activities originate in manufacturing (Peters & Hertwich, 2008). If the foreign subsidiaries established by the MNE focus on the R&D or marketing at the two ends of the smiling curve of the value chain, local firms could be more likely to be engaged in the mid-and-low end manufacturing activities that may generate stronger environmental externality.

Hypothesis 3 (H3): The negative impact of the presence of MNEs on local firms' environmental performance would be stronger if these foreign firms set up their foreign subsidiaries with focus on two ends of the value chain (such as, the upstream R&D and downstream sales and service).

The heterogeneity of local firms

However, local firms are not always passive in providing supporting activities with pollution emit risks as these local firms may also need to balance the costs and benefits of engaging these polluted activities. If local firms have better financial performance, they would have the flexibility to search for high-quality collaboration projects. Instead of playing the supportive role for foreign firms, they may even consider to move up the value chain's smiling curve. Through moving up the value chain, local firms not only can reap larger economic value, but also reduce the pollution emits involved during manufacturing process (Liu, Zong, Hynes, Bruyne, 2020). Even if their business is embedded in the foreign subsidiary value chain at local market, they have spare resources and attention to think about how they can

develop green technology to neutralize the pollution emit through the manufacturing. However, for local firms with poor financial performance, their priority is to increase sales and profits so that they have strong urgency to secure business opportunities (Ndofor, Vanevenhoven, & Barker, 2013), even though it may generate potential environmental risks. In the meanwhile, due to the firm's continuous decline threat, when local firms perform supporting activities for foreign firms, they may reduce their attention and resources invested in environmental issues, and even cut corners and save money, which damage their environmental performance (Campbell, 2007).

Hypothesis 4 (H4): The negative impact of the presence of MNEs on local firms' environmental performance would be weaker (stronger) if local firms have better (worse) financial performance.

METHODS

Sample and Data

To test our hypotheses, we used a sample of Chinese firms publicly listed on the Shanghai and Shenzhen stock exchanges for the years 2009-2015. Our data was collected from three main sources: China Stock Market and Accounting Research (CSMAR), Hexun.com and Financial Times fDi Markets (fDi Markets). In addition, we collected data on city GDP, the utilization rate of industrial wastes, the decontamination rate of urban refuse, and the treatment rate of urban sewage from China City Statistical Yearbooks (various years, from 2008-2016).

We obtained our firm level information from CSMAR, including the stock code, the firm name, the registered address, the firm establishment date, and the industry code. To match with city-level FDI, we geocoded the address to identify in which city a firm is registered.

The information of our key dependent variable on firm environmental performance was extracted from Hexun.com, which provides the professional corporate social responsibility (CSR) evaluation scores of Chinese listed firms (e.g., Shahab, Ntim, Ullah, 2019; Zhao, Fang, & Zhang, 2022). Hexun.com provides CSR score from five elements: shareholder responsibility, customer and supplier rights, employee responsibility, environmental responsibility, and social responsibility. We emphasize on the environment responsibility score for our study.

The FDI data was sourced from fDi Markets, which contains foreign investment projects into China from more than 90 countries and regions, covering 39 industrial sectors and 18 industry activities (Albino & Pimentel, Dussauge, & Shaver, 2018). We used information such as the project source country, the destination city, the project affiliated industry sector, industry activity and the size of project capital inflow. We aggregated the project-level FDI into city-level, and matched FDI with firm-level data by city name.

We collected and used the Environmental Performance Index (EPI) as the weight of FDI to distinguish the environmental requirement of FDI source country.[2] We

[2] The raw indicator scores for EPI construction were collected from https://epi.yale.edu/downloads. Using the 32 raw indicator scores and the different weights in different years, following Wendling et al. (2020), we calculated the longitudinal EPI during 2009-2014. The weight was provided in Appendix Table A.1.

classified FDI into those from developed economies and those from undeveloped economies by FDI source country's income level.[3]

We included a sample of 2,226 listed firms from 19 industrial sectors and thus obtained 11,676 firm-year observations during 2009-2015. The classifications of FDI inflows were provided in Tables A.2-A.4 in the Appendix.

Variables

We used the *firm's environmental responsibility score* as the dependent variable. Our independent variable on the presence of foreign firms was measured by the city aggregate newly established foreign subsidiaries (FDI inflow) over city GDP (labelled as *FDI*). The use of fDi Markets data in the main analysis enables us to capture the detailed information of FDI source country, affiliated industry and activity type. As our study is a panel data, the flow measure of FDI in each city can better capture the time-varying impact. However, one could argue that the limitation of using flow FDI is that we may neglect the presence of past accumulative foreign investment. To overcome this limitation, we also considered the actual utilized total amount of foreign investment in each city provided by China City Statistics Yearbook (various years, 2010-2016) to construct an alternative measure for accumulated FDI intensity. To reflect the FDI home country's environmental regulation level, we used the inverse of EPI ranking to calculate the weighted FDI. The higher the ranking the source

[3] We took reference to the classification by World Bank which is accessible from the url link https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups. Developed economies include those high-income economies with GNI per capita, calculated using the World Bank Atlas method, of $12,536 or more; undeveloped economies include those upper-middle-income countries or regions (GNI per capita $4,046 - $12,536), lower-middle income countries or regions (GNI per capita $1,036 - $4,056), and low-income economies (GNI per capita < $1,035).

country has, the greater the weight would be. We also used alternative ways to capture the home country environmental stringency. Instead of using the EPI ranking as the weight, we directly used EPI as weights. We also distinguished the foreign investment from the top 30 countries with high EPI, and the FDI from the rest countries, and compared their impacts on local firm environmental performance. We used a dummy variable to reflect whether the EPI-weighted FDI is larger than the median of all cities. As it has been generally believed developed countries tend to have stronger environmental requirements than the developing countries, we distinguished FDI from developed countries and underdeveloped countries by their source country.

To test our hypothesis on FDI value chain activity, we also classified FDI into value chain upstream, mid-stream and downstream by its activity type. The upstream FDI are those engaged in research and development activities; the midstream FDI relates to manufacturing; and the downstream relates to sales or services.

We used ROE (return on equity) to measure local firm performance and profitability. For the control variables, we used the logarithm of the number of employees and the number of years since the firm was established to measure the firm size and firm age. Larger and older firms tend to have more resources and more efficient production and pollution control processes (Kim, Sun, Yin, & Moon, 2022). We also controlled firm R&D intensity measured as the ratio of firm's R&D expenses divided by total asset. Firms with stronger R&D intensity may have more capabilities in green process and green product development to improve environmental performance (Singh, Giudice, Ghierici, & Graziano, 2020). We included firm fixed asset ratio as control variable

measured by the ratio of fixed assets over total employees. Furthermore, we included Tobin's Q to capture a firm's growth opportunities. Debt ratio measured by the ratio of total liabilities divided by total assets was also considered.

It has been argued that firms with different ownership may receive different levels of informal regulation, or community pressure, on pollution abatement (Luo and Wang, 2021). We used a dummy variable *SOE* to distinguish state-owned enterprises (SOEs) from private firms. It equals to 1 if a firm is state-owned and 0 otherwise.

We followed prior studies (Fu and Gong, 2011; Luong et al., 2017) to use Industry concentration to account for the degree of industry competition, which was formulated as

$$Industry\ concentration_{jt} = \sum_{i=1}^{i=n} \left(\frac{sales_{ijt}/\sum_i sales_{ijt}}{sales_{jt}/\sum_j sales_{jt}}\right)^2$$

where i is the index for firm and j is the index for industry. A smaller index indicates a more competitive industry environment.

Lastly, we included three city level environmental performance indicators, namely, the utilization rate of industrial wastes, the decontamination rate of urban refuse, and the treatment rate of urban sewage. Since Chinese economy grew fast in past decades, it is possible that the environmental performance of domestic firms in China also evolves over time. We included 6-year dummies (2010-2015) to control the time trend and included industry fixed effects. Descriptive statistics of all variables are listed in Table 1.

Table 1: Descriptive statistics for main variables of interests

Variables	Mean	Std. Dev.	Min	Max
Firm environmental performance	2.127	5.443	0	30
Newly-established FDI	0.940	0.745	0	5.284
Accumulated FDI	1.633	0.550	0.003	3.015
FDI dummy	0.805	0.396	0	1
FDI_EPI	1.307	0.960	0	5.966
FDI_high EPI	0.510	0.500	0	1
FDI_developed	5.617	3.213	0	9.673
FDI_under-developed	2.035	2.610	0	8.436
FDI_high-tech	0.280	0.385	0	3.359
FDI_mid-tech	0.456	0.489	0	5.284
FDI_low-tech	0.581	0.559	0	3.662
FDI_upVC	0.110	0.191	0	0.932
FDI_midVC	0.668	0.620	0	5.284
FDI_downVC	0.460	0.505	0	1.892
Firm age	2.486	0.518	0	4.025
Firm size	7.485	1.447	1.099	13.222
R&D intensity	1.420	3.252	0	14.385
Capital intensity	12.413	1.209	4.127	18.543
Tobins_Q	0.776	0.578	-0.381	10.841
Debt ratio	-0.974	0.744	-6.362	4.930
Industry concentration	-0.800	5.667	-25.872	28.504
SOE	0.443	0.497	0	1
ROE	0.059	1.017	-79.888	28.652
Utilization rate_solid waste	4.462	0.285	-0.198	4.965
Decontamination rate_ garbage	4.521	0.192	1.703	5.892
Treatment rate_sewage	4.424	0.169	-1.833	4.605

Notes: All independent and control variables were lagged by one-year relative to the dependent variable.

Estimation Model

Given that local firm environmental performance score is a discrete variable with many zero values, the standard Poisson model or negative binomial model are inappropriate since zero-observations would be discarded in the estimation, and the loss of observations could underestimate the estimation results. Thus, a zero-inflated Poisson (ZIP) model or a zero-inflated negative binomial (ZINB) model is preferable. Following Long and Freese (2006), We first estimated the over-dispersion coefficient, alpha, and found $p = 0.00$ for the likelihood ratio test of $\alpha = 0$. This suggests that a ZINB model is more appropriate than a ZIP model for the estimation. Next, we ran a Vuong non-nested test to choose between the ordinary and the zero-inflated model. A

significant z-statistic (z = 38.58; p = 0.00) suggests that the ZINB model is a significant improvement over the ordinary negative binomial model. However, nesting occurs when the probability of zero inflation is zero, which violates the regularity conditions of the Vuong test for nonnested models (Wilson, 2015). Thus, we also used Akaike's information criterion (AIC) and Bayesian information criterion (BIC) to double check whether a zero-inflated model is better than an ordinary negative binomial model. The result implies that a ZINB model was preferable to an ordinary negative binomial model. Besides, firm-level clustered standard errors were used to account for within-firm correlations.

We used dependent variables in year *t* (2009-2014) to predict the firm environmental performance in year *t+1* (2010-2015), so as to partially overcome reverse causality. The ZINB model thus estimated the association between the change of a city's FDI intensity and the subsequent change in local firms' environmental responsibility score, controlling for changes of other firm- and city-specific factors that may also influence the firm's environmental performance.

Assessing the Causal Effect of FDI

Foreign firms do not choose their investments at random; instead, they likely consider a host of factors that may be difficult to observe and control for in econometric analyses with observational data. In other words, the test of our hypotheses requires critical attention to potential endogeneity bias. Although we controlled for critical factors potentially impacting local firm environmental performance and lagged independent and control variables, our results may still be influenced by unobservable

factors causing a spurious association between the presence of FDI and firm-level environmental performance. We adopted the 2SLS to address omitting variables problem and reverse causality issue. In the first-stage analysis, the dependent variable is the FDI intensity. We used city foreign visitor numbers (*Foreign Visitor)*, where the company is registered, as an instrumental variable. A higher foreign visitor ratio implies that this city is more attractive to foreigners, which possibly leads to more FDI. But foreign visitors may not significantly influence local firms' environmental performance. We followed prior research (Cheng et al., 2014; Wang & Li, 2019) to verify that the instrument satisfies both conditions of exogeneity and relevance and, as a result, is a valid instrument. Statistically, this is confirmed by the Sargan statistic as 0.000, and the F statistic in the first stage is 127.61, p=0.000.

RESULTS

Main Results

The correlation matrix of variables used in this study were listed in Table 2. There was no multicollinearity issue since the VIF for each repressor is less than 2. We presented our main results in Tables 3 to 5.

Table 2: Correlation matrix for main variables of interests

	Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	VIF
1	Firm environmental performance	1.000														
2	Newly-established FDI	-0.004	1.000													1.08
3	Firm age	0.023	-0.065	1.000												1.14
4	Firm size	0.282	-0.103	-0.007	1.000											1.49
5	R&D intensity	0.002	0.071	-0.068	0.035	1.000										1.04
6	Capital intensity	0.122	-0.029	0.093	-0.025	-0.059	1.000									1.20
7	Tobins_Q	-0.120	0.057	-0.115	-0.436	0.086	-0.292	1.000								1.47
8	Debt ratio	0.085	-0.016	0.273	0.250	-0.109	0.135	-0.273	1.000							1.40
9	Industry concentration	0.121	0.014	0.000	0.262	-0.046	0.068	-0.100	0.071	1.000						1.08
10	SOE	0.197	0.049	0.214	0.295	-0.027	0.219	-0.258	0.298	0.119	1.000					1.28
11	ROE	0.023	0.005	-0.025	0.034	0.011	-0.020	-0.013	-0.047	0.023	-0.009	1.000				1.01
12	Utilization rate_solid waste	-0.051	0.137	-0.003	-0.054	0.004	-0.026	0.027	-0.060	-0.008	-0.086	0.016	1.000			1.04
13	Decontamination rate_ garbage	-0.044	0.109	-0.023	-0.006	0.029	-0.021	-0.034	-0.028	-0.016	-0.056	-0.002	0.026	1.000		1.09
14	Treatment rate_sewage	-0.055	0.017	0.067	0.007	0.050	-0.023	-0.063	-0.025	-0.010	-0.050	0.002	0.042	0.266	1.000	1.09

Notes: Mean VIF is 1.19. All independent and control variables were lagged by one-year relative to the dependent variable. All correlations larger than 0.02 are significant at $p < 0.01$.

Table 3 provides the ZINB estimation results that test our Hypothesis 1 on the impact of FDI on local firm environmental performance. Models 1 and 2 included newly established FDI intensity and FDI dummy; Model 3 included accumulated FDI intensity; and Model 4 used the count of inbound travelers as an instrumental variable to proxy FDI intensity.

Our baseline result indicates that a local firm's environmental performance is lower if the firm is located in cities with higher FDI intensity (Model 1: b = -0.047, p = 0.000). Similarly, a firm's environmental performance is lower in cities with newly established FDI (Model 2: b = -0.047, p = 0.001). We tested the robustness of our baseline results using an alternative FDI intensity in Model 3 as well as an alternative estimator (i.e. 2SLS) in Model 4, and the results remain robust (Model 3: b = -0.047, p = 0.002; Model 4: b = -0.403, p = 0.005). The results are consistent across specifications, showing the presence of MNEs has a negative impact on local firms' environmental performance. Hypothesis 1 was supported.

Table 3: ZINB regression on local firm environmental performance (2009-2015)

	Model 1		Model 2		Model 3		Model 4			
	Newly-established FDI		FDI dummy		Accumulated FDI		2SLS_1st stage		2SLS_2nd stage	
	β (SE)	*P* value	β (SE)	*P* value	β (SE)	*P* value	β (SE)	*P* value	β (SE)	*P* value
FDI	-0.047	0.000	-0.047	0.001	-0.047	0.002			-0.403	0.005
	(0.011)		(0.014)		(0.015)				(0.142)	
FDI_IV							0.033	0.016		
							(0.016)			
Firm age	-0.091	0.000	-0.087	0.000	-0.085	0.000	-0.083	0.045	-0.123	0.000
	(0.020)		(0.019)		(0.020)		(0.045)		(0.019)	
Firm size	0.018	0.003	0.019	0.007	0.020	0.003	-0.045	0.012	0.000	0.993
	(0.006)		(0.007)		(0.007)		(0.012)		(0.010)	
R&D intensity	-0.007	0.002	-0.008	0.003	-0.008	0.000	-0.006	0.002	-0.009	0.000
	(0.002)		(0.003)		(0.002)		(0.002)		(0.002)	
Capital intensity	0.047	0.011	0.044	0.014	0.044	0.015	-0.008	0.009	0.041	0.028
	(0.018)		(0.018)		(0.018)		(0.009)		(0.019)	
Tobins_Q	-0.040	0.007	-0.042	0.006	-0.026	0.113	-0.045	0.018	-0.058	0.001
	(0.015)		(0.016)		(0.016)		(0.018)		(0.018)	
Debt ratio	0.002	0.873	0.004	0.684	0.008	0.394	-0.018	0.015	-0.005	0.658
	(0.010)		(0.010)		(0.010)		(0.015)		(0.011)	
Industry concentration	0.000	0.777	0.000	0.920	0.001	0.596	0.001	0.005	0.001	0.476

	(0.001)		(0.001)		(0.001)		(0.005)		(0.001)	
SOE	0.040	0.021	0.031	0.062	0.033	0.021	-0.046	0.035	0.013	0.503
	(0.017)		(0.017)		(0.014)		(0.035)		(0.020)	
ROE	-0.075	0.137	-0.062	0.249	-0.159	0.017	-0.007	0.003	-0.060	0.282
	(0.050)		(0.053)		(0.066)		(0.003)		(0.056)	
Utilization rate_ solid waste	0.004	0.848	-0.005	0.728	0.005	0.756	0.018	0.020	0.005	0.721
	(0.018)		(0.015)		(0.016)		(0.020)		(0.013)	
Decontamination rate_ garbage	-0.045	0.112	-0.051	0.057	-0.048	0.124	0.022	0.026	-0.035	0.226
	(0.028)		(0.027)		(0.031)		(0.026)		(0.029)	
Treatment rate_sewage	-0.032	0.236	-0.033	0.217	-0.025	0.376	0.328	0.075	0.108	0.058
	(0.027)		(0.026)		(0.029)		(0.075)		(0.057)	
Constant	2.201	0.000	2.301	0.000	2.216	0.000	0.102	0.414	2.292	0.000
	(0.403)		(0.370)		(0.411)		(0.414)		(0.385)	
Observations	11,676		11,676		11,676		11,676		11,676	
Nonzero observations	2,226		2,226		2,215				2,217	
Zero observations	9,450		9,450		9,411				9,364	
Year FE	YES		YES		YES		YES		YES	
Industry FE	YES		YES		YES		YES		YES	
First-stage F stat.							127.61	0.000		
Log likelihood	-11802		-11812		-11753				-11751	

Notes: Robust standard errors in parentheses. Dependent variable: environmental responsibility score.

Table 4 presents the heterogeneous impacts of FDI from countries with different EPI (Models 1 to 5), from developed and undeveloped countries (Model 6), and from the upstream, midstream and downstream value chain (Model 7). In Model 1 and 3 we used EPI rankings and EPI values, respectively to calculate the weighted FDI intensity. Model 2 considered if the EPI-ranking weighted FDI is above the mean, and Model 4 considered if the EPI-value weighted FDI is above the mean.

Results from Models 1 – 4 indicate that FDI sourced from countries with a higher environmental protection requirement has a significant and more negative impact on local firms' environmental responsibility score. In Model 5, we compared the effect of FDI from high-EPI countries and from low EPI countries. It shows that the impact of FDI from high-EPI countries on local firm environment responsibility score is negative and significant, while being insignificant for FDI from low-EPI countries

($b_{HighEPI\text{-}FDI}$ = -0.065, p = 0.001; $b_{LowEPI\text{-}FDI}$ = 0.019, p = 0.531). Since developed countries are more likely to adopt more stringent environmental regulations than underdeveloped ones, we distinguished FDI by their source country income level. Model 6 showed that FDI from both developed and undeveloped countries are significantly negative, but the negative impact is stronger for the former (Model 6: $b_{Deve\text{-}FDI}$ = -0.008, p = 0.000; $b_{Undeve\text{-}FDI}$ = -0.008, p = 0.040). Thus, results from Models 1 – 6 support Hypothesis 2.

Model 7 show that both upstream and downstream FDI have negative and significant impact (Model 7: $b_{Up\text{-}FDI}$ = -0.096, p = 0.032; $b_{Down\text{-}FDI}$ = -0.046, p = 0.001), while midstream FDI has insignificant impact (Model 7: $b_{Mid\text{-}FDI}$ = -0.006, p = 0.746). When foreign subsidiaries are more engaged in the upstream value chain activities such as product design, development, testing, and R&D or the downstream value chain activities such as sales and service, they create a value chain vacancy for local firms to be engaged in more manufacturing-related activities. Compared with R&D or service type of activities, manufacturing is more likely to produce negative environment externality. When foreign subsidiaries are engaged more in midstream of the value chain, they provide limited opportunities to or even do not need the support from the local business ecosystem in manufacturing. Therefore, the result in Model 7 well support Hypothesis 3.

Table 4: ZINB regression on local firm environmental performance (by the heterogeneity of MNEs, 2009-2015)

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7	
	β (SE)	*P* value	β (SE)	*P* value	β (SE)	*P* value	β (SE)	*P* value	β (SE)	*P* value	β (SE)	*P* value	β (SE)	*P* value
FDI_EPI	-0.038 (0.008)	0.000												
FDI_EPI dummy			-0.065 (0.020)	0.001										
FDI_EPI2					-0.039 (0.009)	0.000								
FDI_EPI dummy2							-0.057 (0.020)	0.005						
FDI_high EPI									-0.065 (0.007)	0.000				
FDI_low EPI									0.019 (0.030)	0.531				
FDI_developed											-0.008 (0.002)	0.000		
FDI_under-developed											-0.008 (0.004)	0.040		
FDI_upVC													-0.096 (0.045)	0.032
FDI_midVC													-0.006 (0.018)	0.746
FDI_downVC													-0.046 (0.014)	0.001
Firm age	-0.091 (0.020)	0.000	-0.089 (0.019)	0.000	-0.091 (0.020)	0.000	-0.088 (0.020)	0.000	-0.092 (0.020)	0.000	-0.093 (0.021)	0.000	-0.093 (0.022)	0.000
Firm size	0.019 (0.006)	0.002	0.020 (0.006)	0.003	0.019 (0.006)	0.003	0.020 (0.007)	0.003	0.019 (0.006)	0.001	0.018 (0.006)	0.003	0.018 (0.006)	0.003
R&D intensity	-0.007 (0.002)	0.002	-0.007 (0.002)	0.001	-0.007 (0.002)	0.002	-0.007 (0.002)	0.001	-0.007 (0.002)	0.004	-0.006 (0.002)	0.005	-0.007 (0.002)	0.004
Capital intensity	0.047 (0.018)	0.010	0.046 (0.018)	0.011	0.047 (0.018)	0.010	0.046 (0.018)	0.013	0.048 (0.018)	0.006	0.046 (0.018)	0.010	0.048 (0.018)	0.008
Tobins_Q	-0.040 (0.015)	0.007	-0.036 (0.016)	0.022	-0.040 (0.015)	0.007	-0.037 (0.016)	0.022	-0.037 (0.014)	0.006	-0.041 (0.015)	0.008	-0.040 (0.014)	0.004
Debt ratio	0.002 (0.010)	0.856	0.003 (0.010)	0.781	0.002 (0.010)	0.864	0.003 (0.010)	0.800	0.001 (0.010)	0.926	0.002 (0.010)	0.886	-0.001 (0.010)	0.927
Industry concentration	0.000 (0.001)	0.818	0.000 (0.001)	0.862	0.000 (0.001)	0.809	0.000 (0.001)	0.827	0.000 (0.001)	0.745	0.001 (0.001)	0.722	0.001 (0.001)	0.567
SOE	0.040	0.018	0.039	0.025	0.040	0.019	0.039	0.023	0.042	0.014	0.042	0.011	0.042	0.015

	(0.017)		(0.018)		(0.017)		(0.017)		(0.017)		(0.017)		(0.017)	
ROE	-0.075	0.135	-0.075	0.129	-0.075	0.135	-0.074	0.143	-0.078	0.114	-0.069	0.175	-0.075	0.139
	(0.050)		(0.050)		(0.050)		(0.051)		(0.049)		(0.051)		(0.051)	
Utilization rate_solid waste	0.007	0.720	0.002	0.918	0.006	0.754	-0.003	0.892	0.010	0.586	0.005	0.755	-0.004	0.850
	(0.018)		(0.020)		(0.018)		(0.020)		(0.018)		(0.015)		(0.020)	
Decontamination rate_garbage	-0.041	0.144	-0.044	0.158	-0.042	0.134	-0.049	0.101	-0.042	0.159	-0.033	0.210	-0.050	0.085
	(0.028)		(0.031)		(0.028)		(0.030)		(0.030)		(0.026)		(0.029)	
Treatment rate_sewage	-0.031	0.251	-0.043	0.127	-0.031	0.252	-0.042	0.121	-0.038	0.167	-0.025	0.386	-0.029	0.261
	(0.027)		(0.028)		(0.027)		(0.027)		(0.027)		(0.028)		(0.026)	
Constant	2.169	0.000	2.226	0.000	2.178	0.000	2.264	0.000	2.156	0.000	2.135	0.000	2.231	0.000
	(0.399)		(0.431)		(0.400)		(0.424)		(0.401)		(0.367)		(0.400)	
Observations	11,676		11,676		11,676		11,676		11,676		11,676		11,676	
Nonzero observations	2,226		2,226		2,226		2,226		2,226		2,226		2,226	
Zero observations	9,450		9,450		9,450		9,450		9,450		9,450		9,450	
Year FE	YES		YES		YES		YES		YES		YES		YES	
Industry FE	YES		YES		YES		YES		YES		YES		YES	
Log likelihood	-11802		-11805		-11802		-11807		-11797		-11800		-11797	

Notes: Robust standard errors in parentheses. Dependent variable: environmental responsibility score.

Table 5 shows results from the view of the heterogeneity of local firms with the inclusion of interaction term of FDI and local firm performance. Model 1 and 2 included the intensity of newly established FDI and considered FDI presence, respectively. Model 3 considered an alternative measure that is the accumulated FDI intensity. Model 4 focused on FDI from countries with different EPI rankings. The coefficient of FDI measures remain significantly negative across all models. The moderating effect of ROE is positive and significant (Model 1: b = 0.158, p = 0.014; Model 2: b = 0.323, p = 0.000; Model 3: b = 0.184, p = 0.009; Model 4: b = 0.138, p = 0.002). This suggests that the negative impact of FDI on local firms' environmental performance would be weaker if local firms have better financial performance. Therefore, Hypothesis 4 is highly supported.

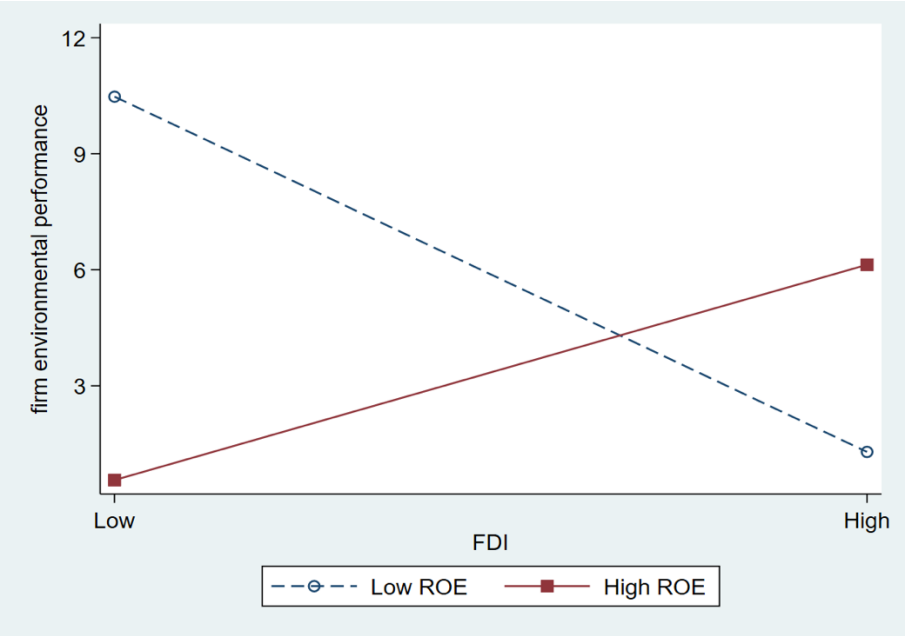
We use Model 1 results to further explain moderating effect shown in Figure 1. When ROE is at its mean, a 10% increase of FDI decreases environment performance by 0.5%. When ROE is one standard deviation below the mean, a 10% increase of FDI decreases environment performance by 2.1%. As ROE decreases from the mean to one standard deviation below the mean, the growth of FDI decreases environment performance by an additional 1.6%. In Figure 1a, we can observe a very negative slope between the FDI and local firm environmental performance if these local firms have relatively low financial performance. However, the slope turned into positive if firms have better financial performance. This finding shows that for firms have better performance, they may have more resources and stronger capabilities, which can better choose their projects and learn from foreign firms to improve their

environmental performance. Figure 1b is more clearly to show us that the moderating effect of ROE becomes positive (above 0) if firms have stronger financial performance (above mean).

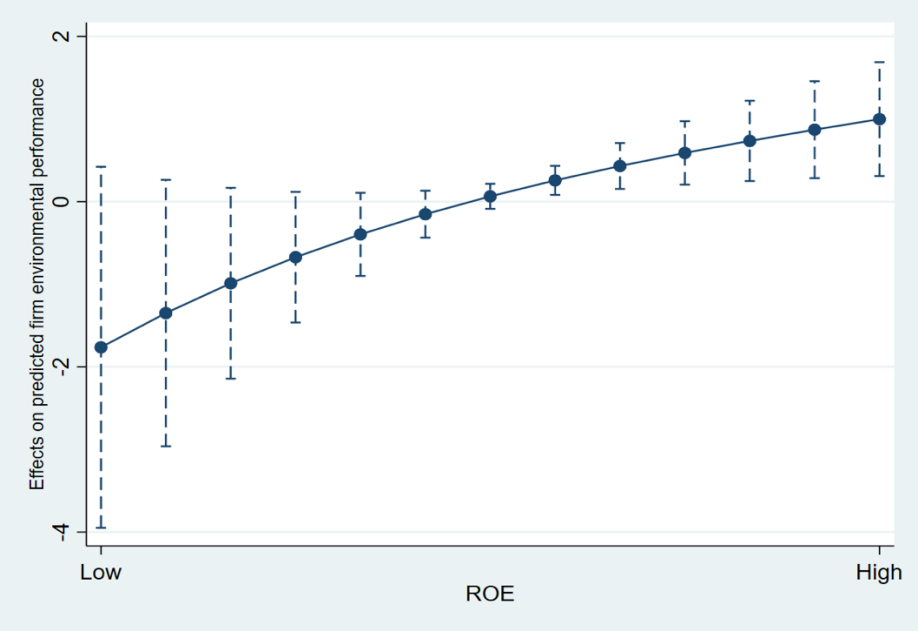
Table 5: ZINB regression on local Firm environmental performance (by the heterogeneity of local firms, 2009-2015)

	Model 1 Newly-established FDI intensity		Model 2 FDI dummy		Model 3 Accumulated FDI intensity		Model 4 FDI_EPI	
	β (SE)	*P* value	β (SE)	*P* value	β (SE)	*P* value	β (SE)	*P* value
FDI	-0.064	0.000	-0.081	0.000	-0.066	0.000	-0.053	0.000
	(0.011)		(0.019)		(0.015)		(0.008)	
FDIxROE	0.158	0.014	0.323	0.000	0.184	0.009	0.138	0.002
	(0.064)		(0.076)		(0.070)		(0.044)	
Firm age	-0.091	0.000	-0.086	0.000	-0.085	0.000	-0.091	0.000
	(0.020)		(0.019)		(0.019)		(0.020)	
Firm size	0.019	0.002	0.019	0.007	0.020	0.004	0.020	0.002
	(0.006)		(0.007)		(0.007)		(0.006)	
R&D intensity	-0.007	0.001	-0.008	0.003	-0.008	0.000	-0.007	0.001
	(0.002)		(0.003)		(0.002)		(0.002)	
Capital intensity	0.048	0.007	0.046	0.010	0.046	0.011	0.048	0.006
	(0.018)		(0.018)		(0.018)		(0.018)	
Tobins_Q	-0.031	0.041	-0.035	0.037	-0.026	0.138	-0.030	0.057
	(0.015)		(0.017)		(0.017)		(0.016)	
Debt ratio	0.003	0.723	0.005	0.648	0.008	0.392	0.004	0.701
	(0.010)		(0.010)		(0.010)		(0.009)	
Industry concentration	0.001	0.707	0.000	0.819	0.001	0.551	0.001	0.722
	(0.001)		(0.001)		(0.001)		(0.001)	
SOE	0.040	0.021	0.031	0.056	0.033	0.021	0.040	0.017
	(0.017)		(0.016)		(0.014)		(0.017)	
ROE	-0.252	0.008	-0.333	0.000	-0.427	0.000	-0.286	0.001
	(0.095)		(0.081)		(0.113)		(0.086)	
Utilization rate_solid waste	0.008	0.670	0.001	0.931	0.006	0.724	0.012	0.510
	(0.019)		(0.016)		(0.016)		(0.019)	
Decontamination rate_ garbage	-0.048	0.096	-0.056	0.028	-0.053	0.089	-0.045	0.120
	(0.029)		(0.025)		(0.031)		(0.029)	
Treatment rate_sewage	-0.030	0.243	-0.032	0.208	-0.027	0.348	-0.029	0.260
	(0.025)		(0.026)		(0.028)		(0.025)	
Constant	2.168	0.000	2.290	0.000	2.257	0.000	2.131	0.000
	(0.397)		(0.367)		(0.409)		(0.396)	
Observations	11,676		11,676		11,676		11,676	
Nonzero observations	2,226		2,226		2,215		2,226	
Zero observations	9,450		9,450		9,411		9,450	
Year FE	YES		YES		YES		YES	
Industry FE	YES		YES		YES		YES	
Log likelihood	-11799		-11807		-11751		-11797	

Notes: Robust standard errors in parentheses. Dependent variable: environmental responsibility score.



a) Simple slope comparison of FDI increase on local firm environmental performance for firms with low ROE and high ROE, 95% confidence intervals.



b) Change in marginal effects of FDI on local firm environmental performance across different levels of ROE, 95% confidence intervals.

Figure 1 The moderation effect of ROE on the relationship between FDI and local firm environmental performance

Supplementary Analyses

Mechanism test

As our core arguments suggested, foreign investments would create opportunities for local business ecosystems to provide supporting activities, and induce more pollution emits. To test this mechanism, we conducted a three-stage mediation analysis including the number of business clusters as the mediating variable. In the first stage, we estimated the total effect of FDI on corporate environment performance; in the second stage, we estimated the impact of FDI on the number of business clusters proxied by industrial parks; in the third stage, we analyzed the effect of the number of business clusters on corporate environment performance.

The results were reported in Table 6. Model 1 shows the total effect is significantly negative (b = -0.047, p = 0.000). Model 2 finds that FDI significantly promotes the formation of business clusters (b = 0.457, p = 0.000). We also found that the coefficient of business clusters is negative and significant in Model 3 (b = -0.047, p = 0.008). Our results showed a partial mediating effect of the number of business clusters between FDI and local firm environmental performance, and suggested that the expansion of local business ecosystem that provides supporting activities to MNEs partially explains for the indirect PH channel.

Table 6: Mechanism test

	Model 1 Environment performance		Model 2 Industrial park		Model 3 Environment performance	
	β (SE)	*P* value	β (SE)	*P* value	β (SE)	*P* value
FDI	-0.047	0.000	0.457	0.000	-0.030	0.008
	(0.011)		(0.009)		(0.011)	
Firm age	-0.091	0.000	-0.014	0.229	-0.088	0.000
	(0.020)		(0.012)		(0.020)	
Firm size	0.018	0.003	-0.019	0.000	0.018	0.004
	(0.006)		(0.004)		(0.006)	
R&D intensity	-0.007	0.002	-0.001	0.453	-0.007	0.001
	(0.002)		(0.001)		(0.002)	
Capital intensity	0.047	0.011	0.001	0.887	0.047	0.010
	(0.018)		(0.005)		(0.018)	
Tobins_Q	-0.040	0.007	-0.039	0.002	-0.042	0.004
	(0.015)		(0.013)		(0.015)	
Debt ratio	0.002	0.873	0.017	0.047	0.002	0.870
	(0.010)		(0.009)		(0.010)	
Industry concentration	0.000	0.777	0.001	0.472	0.000	0.924
	(0.001)		(0.001)		(0.001)	
SOE	0.040	0.021	-0.022	0.057	0.036	0.021
	(0.017)		(0.012)		(0.016)	
ROE	-0.075	0.137	0.011	0.161	-0.067	0.210
	(0.050)		(0.008)		(0.054)	
Utilization rate_solid waste	0.004	0.848	0.324	0.000	0.008	0.645
	(0.018)		(0.027)		(0.017)	
Decontamination rate_ garbage	-0.045	0.112	0.273	0.000	-0.033	0.281
	(0.028)		(0.044)		(0.031)	
Treatment rate_sewage	-0.032	0.236	0.199	0.000	-0.023	0.430
	(0.027)		(0.047)		(0.029)	
Industrial park					-0.047	0.008
					(0.018)	
Constant	2.201	0.000	-4.196	0.000	2.108	0.000
	(0.403)		(0.297)		(0.412)	
Observations	11,676		11,676		11,676	
Nonzero observations						
Zero observations	9,450				9,450	
Year FE	YES		YES		YES	
Industry FE	YES		YES		YES	
Log likelihood	-11802		-12358		-11798	

Notes: Robust standard errors in parentheses. Dependent variable in Models 1&3: environmental responsibility score; dependent variable in Model 2: the number of industrial park.

Sub-sample analyses

A large literature examines the relationship between ownership structure and firms' CSR choices, and finds that a firm's CSR activities closely link with the interests of shareholders (Gillan, Koch and Starks, 2021; Luo and Wang, 2019). As China was increasingly concerned with environmental protection, and adopted stricter environmental regulations, we expected that SOEs, that have closer political

connections with and receive more significant control from governments, are more likely to engage in CSR activities and have more environment pressures than non-SOEs. Considering this feature, we split the full sample into the SOE and the non-SOE sub-samples and conducted similar estimations. The results were presented in Table 7. Comparing Models 1 and 2, we found that, though FDI produces significant and negative environmental externality to both types of firms, the negative effect is stronger for non-SOEs than for SOEs (Model 1: b = -0.040, p = 0.004; Model 2: b = -0.064, p = 0.001).

The Ministry of Ecology and Environment of China has promulgated in 2008 *The Listed Firms Environmental Protection Inspection Classified Management Directory (The Directory). The Directory* specifies 16 heavily-polluted industries, including the thermal power, the steel, the cement, the electrolytic aluminum, the coal, the metallurgy, the building material, the mining, the chemical, the petrochemical, the pharmacy, the brewing, the papermaking, the fermentation, the textile, and the leather industry. [4] Considering the industry heterogeneity, we split firms into high- and low-pollution industries and conducted the sub-sample estimations. A comparison of Model 3 with 4 in Table 7 indicates that FDI has generated a little stronger environmental externality in heavily-polluted industries (Model 3: b = -0.054, p = 0.000; Model 4: b = -0.049, p = 0.002).

We also considered whether the cross-city heterogeneity in local environmental supervision would play a role in affecting the indirect PH. Based on the Pollution

[4] The classification table is accessible from http://www.gov.cn/gzdt/2008-07/07/content_1038083.htm.

Information Transparency Index (PITI) for 120 Cities published by the Institute of Public & Environmental Affairs (IPE), we calculated each city's average PITI during 2008-2014.[5] We then defined those cities as high-supervision if their average is above or equal to the median and low-supervision if their average is below the median. Comparing Model 5 with 6 in Table 7, we found that the indirect pollution effect is stronger for firms located in cities with higher level of environmental supervision (Model 5: b = -0.058, p = 0.000; Model 6: b = -0.038, p = 0.029). These results again indicated that stricter local environmental supervision and inspection from the government, the media, and the environmental organizations puts greater pressure on the subsidiaries of MNEs to green their investment. To maintain the brand reputation and reduce the environmental violation risks, foreign subsidiaries located in cities with higher level of environmental supervision are more likely to transfer activities that emits more pollution through their local value chain.

[5] The PITI data was obtained from the 2018-2019 Annual Report of Pollution Information Transparency Index (PITI) for 120 Cities. The assessment of local environmental supervision level considers five primary indicators: 1) environmental supervision information, 2) pollution source self-disclosure, 3) interactive response, 4) enterprise emission data, and 5) environmental impact assessment information, as well as eight secondary indicators. Each indicator is measured from four dimensions: systematicness, timeliness, completeness, and user-friendliness. More details are accessible from http://chine-ecologie.org/defis-climatiques/gaz-a-effet-de-serre/86-annual-report-of-pollution-information-transparency-index-piti-for-120-cities-in-china.

Table 7: Sub-sample analyses

	Model 1 SOE		Model 2 Non-SOE		Model 3 High- pollution		Model 4 Low-pollution		Model 5 High-supervision		Model 6 Low-supervision	
	β (SE)	*P* value	β (SE)	*P* value	β (SE)	*P* value	β (SE)	*P* value	β (SE)	*P* value	β (SE)	*P* value
FDI	-0.040	0.004	-0.064	0.001	-0.054	0.000	-0.049	0.002	-0.058	0.000	-0.038	0.029
	(0.014)		(0.020)		(0.012)		(0.016)		(0.014)		(0.017)	
Firm age	-0.055	0.000	-0.129	0.002	-0.090	0.042	-0.075	0.000	-0.120	0.002	-0.059	0.018
	(0.015)		(0.042)		(0.044)		(0.018)		(0.039)		(0.025)	
Firm size	0.024	0.001	0.019	0.136	0.016	0.282	0.023	0.005	0.017	0.069	0.013	0.062
	(0.007)		(0.013)		(0.015)		(0.008)		(0.009)		(0.007)	
R&D intensity	-0.008	0.001	-0.008	0.061	0.001	0.796	-0.009	0.008	-0.010	0.000	0.002	0.722
	(0.002)		(0.004)		(0.004)		(0.003)		(0.002)		(0.005)	
Capital intensity	0.043	0.016	0.051	0.039	0.022	0.682	0.050	0.018	0.055	0.003	0.029	0.226
	(0.018)		(0.025)		(0.055)		(0.021)		(0.018)		(0.024)	
Tobins_Q	-0.055	0.009	0.009	0.731	-0.140	0.000	0.005	0.877	0.043	0.096	-0.093	0.001
	(0.021)		(0.026)		(0.023)		(0.033)		(0.026)		(0.028)	
Debt ratio	0.010	0.468	-0.002	0.787	0.067	0.000	-0.027	0.164	-0.006	0.574	-0.006	0.699
	(0.013)		(0.009)		(0.015)		(0.019)		(0.010)		(0.014)	
Industry concentration	0.000	0.965	-0.001	0.645	-0.006	0.108	0.002	0.294	0.006	0.000	0.001	0.758
	(0.002)		(0.001)		(0.004)		(0.002)		(0.001)		(0.003)	
SOE					0.053	0.141	0.058	0.051	0.067	0.000	0.063	0.001
					(0.036)		(0.029)		(0.018)		(0.018)	
ROE	-0.048	0.435	-0.218	0.003	-0.160	0.000	-0.031	0.608	-0.067	0.579	-0.144	0.013
	(0.062)		(0.073)		(0.046)		(0.060)		(0.120)		(0.058)	
Utilization rate_solid waste	-0.025	0.161	0.214	0.016	-0.008	0.938	0.044	0.122	0.073	0.343	-0.011	0.645
	(0.018)		(0.089)		(0.107)		(0.029)		(0.077)		(0.024)	
Decontamination rate_garbage	-0.074	0.061	0.017	0.666	-0.000	0.999	-0.030	0.310	-0.361	0.000	0.013	0.629
	(0.039)		(0.039)		(0.103)		(0.030)		(0.087)		(0.028)	
Treatment rate_sewage	0.004	0.912	-0.097	0.006	0.018	0.701	-0.082	0.021	-0.125	0.605	-0.017	0.384
	(0.033)		(0.035)		(0.047)		(0.035)		(0.241)		(0.019)	
Constant	2.398	0.000	1.220	0.055	2.825	0.000	1.946	0.000	3.795	0.001	2.101	0.000
	(0.368)		(0.636)		(0.273)		(0.529)		(1.092)		(0.473)	
Observations	5,136		6,540		2,033		9,643		5,018		5,113	
Nonzero observations	1,367		859		474		1,752		1,086		846	
Zero observations	3,769		5,681		1,559		7,891		3,932		4,267	
Year FE	YES		YES		YES		YES		YES		YES	
Industry FE	YES		YES		YES		YES		YES		YES	
Log likelihood	-6798		-4937		-2372		-9380		-5524		-4587	

Notes: Robust standard errors in parentheses. Dependent variable: environmental responsibility score.

DISCUSSION

In this study, we investigated the relationship between foreign investment and local firm environmental performance. With a shifted focus from the direct PH to indirect PH, we found that the presence of foreign firms may not produce direct environmental externality, and instead, they could transfer the environmental risks to local business ecosystem that provides support activities as part of the value chain.

Based on a sample of publicly listed firms located across different cities in China between 2009-2015, our results tested the indirect PH hypothesis and showed that the presence of MNEs has a negative impact on local firms' environmental performance. Our results further demonstrated the mechanisms, showing that such indirect PH effect is stronger when foreign firms come from countries with more stringent environmental standards, or when foreign investment activities are concentrated at the two ends of value chain. However, such indirect PH effect is weaker if local firms have better financial performance.

Our study advances prior PH literature through identifying an indirect PH channel with a focus on the local firms' environmental performance. From U.S. firms' perspective, Li & Zhou (2017) identified the offshoring channel firms tend to use to reduce their pollution to meet the U.S. pollution standards, while Berry, Kaul, & Lee (2021) revealed direct sourcing from unrelated third parties abroad based on U.S. importing data. Our results revealed the indirect PH channel for MNEs through offshore-outsourcing, utilizing the foreign subsidiaries established at the host market to access to the support activities by local firms through the value chain. Failing to

recognize the indirect effect of PH leads to the underestimation PH effect, so that our work is an important extension of current PH literature (e.g., Berry et al., 2021; Li & Zhou, 2017).

On the other hand, though prior studies on PH are insightful for us to understand how environmental regulations impact MNEs to choose their locations of direct outsourcing or offshoring manufacturing, we pay less attention to the subsequent impact after these MNEs' entry on the development of local business ecosystem. Indeed, Li & Zhou (2017) pointed out that one of main limitation of their study is that the direct impact of foreign investment on local firms' environment performance is neglected (Li & Zhou, 2017). Through focusing the impact of MNEs from different home countries on local firms in China, our work contributes to the effort of combining both FDI home and host country perspectives, and thus provides a more complete picture of PH hypothesis.

Our findings demonstrate the importance of tackling the climate and environmental issues through global efforts. As discussed in our core arguments, it involves both the MNEs and local firms to generate the potential indirect PH effect. It may not be the intentional behavior of MNEs to pass the polluted activities to local firms, but local firms actively seek for business opportunities, and then generate pollution emits during delivering products due to the relatively loose local environmental regulations. Our study also complements the pollution halo literature, which proposes that MNEs from advanced economies could bring more innovative technologies, apply higher environmental standards, and incorporate better environment governance regimes, to

generate environmental externalities to local firms through knowledge spillovers (Christmann & Taylor, 2001; Kim et al., 2022). Such pollution halo hypothesis based on knowledge and technology spillover mechanism is mainly captured by foreign and domestic firms in the same industry (Albornoz, Cole, Elliott, & Ercolani, 2009; Kim et al., 2022). Our study design is a good complement to such studies as we focus on the impact of foreign firms' presence on local firms' environmental performance via the lens of local value chain.

Last but not the least, our study responds to the call of analyzing global value chain in a more finely sliced way (Mudambi & Puck, 2016). Our findings on the opportunities of passing polluted activities to local firms through foreign subsidiaries show the importance of taking the potential value and benefits from the larger external network MNEs can access to. We argue that MNE taking on the role of a value chain 'orchestrator' (Hinterhuber, 2002) to attract local firms to provide needed activities, which is also consistent with the view on the emergence of local business ecosystem that established MNEs, which have more resources and capabilities than local indigenous firms in establishing and coordinating value chains (Kano, 2018).

Our study also has some limitations, which provide future research opportunities. First, we leveraged the differences in FDI investments, the variations of local environmental supervision, and the heterogeneity in firm-specific characteristic to examine the indirect PH effect in China. We could deepen our understanding of why the indirect PH occurs, and how to embrace the environment challenge given the global value chain division, using data from other emerging markets. Second, we

analyzed the indirect PH mechanism mainly from the angle of domestic firms engaged in the midstream production activities. We teased out this mechanism through analyzing different subsamples, the moderation effect, and the mediation effect. However, due to data accessibility, we are not able to measure the size of support activities provided by local business ecosystem induced by foreign investment, and thus directly test the core mechanism. Future research could conduct more in-depth case analysis to further investigate the mechanism.

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Appendix

Table A.1: Indictors for EPI calculation with three-letter abbreviations (TLAs) and weights (Wt.) within each level of aggregation

Policy Objective	Issue Category	TLA	Wt.	Indicator	TLA	Wt.
Environmental Health	Air Quality	AIR	50%	PM2.5 Exposure	PMD	55%
				Household Solid Fuels	HAD	40%
HLT				Ozone Exposure	OZD	5%
40%	Sanitation & Drinking Water	H2O	40%	Unsafe Sanitation	USD	40%
				Unsafe Drinking Water	UWD	60%
	Heavy Metals	HMT	5%	Lead Exposure	PBD	100%
	Waste Management	WMG	5%	Controlled Solid Waste	MSW	100%
Ecosystem Vitality	Biodiversity & Habitat	BDH	25%	Terrestrial Biome Protection (national)	TBN	20%
				Terrestrial Biome Protection (global)	TBG	20%
ECO				Marine Protected Areas	MPA	20%
60%				Protected Areas Representativeness Index	PAR	10%
				Species Habitat Index	SHI	10%
				Species Protection Index	SPI	10%
				Biodiversity Habitat Index	BHV	10%
	Ecosystem Services	ECS	10%	Tree Cover Loss	TCL	90%
				Grassland Loss	GRL	5%
				Wetland Loss	WTL	5%
	Fisheries	FSH	10%	Fish Stock Status	FSS	35%
				Marine Trophic Index	RMS	35%
				Fish Caught by Trawling	FGT	30%
	Climate Change	CCH	40%	CO2 Growth Rate	CDA	55%
				CH4 Growth Rate	CHA	15%
				F-gas Growth Rate	FGA	10%
				N2O Growth Rate	NDA	5%
				Black Carbon Growth Rate	BCA	5%
				CO2 from Land Cover	LCB	2.5%
				GHG Intensity Trend	GIB	5%
				GHG per Capita	GHP	2.5%
	Pollution Emissions	APE	5%	SO2 Growth Rate	SDA	50%
				NOX Growth Rate	NXA	50%
	Agriculture	AGR	5%	Sustainable Nitrogen Management Index	SNM	100%
	Water Resources	WRS	5%	Wastewater Treatment	WWT	100%

Notes: Table from Technical Appendix of 2020 Environmental Performance Index Report.

Table A.2: Classification of high-tech, mid-tech and low-tech industry sectors

High-tech sectors	Medium-high-tech sectors	Medium-low-tech sectors	Low-tech sectors
Semiconductors	Automotive OEM	Coal, Oil and Natural Gas	Real Estate
Electronic Components	Chemicals	Metals	Financial Services
Communications	Automotive Components	Rubber	Hotels & Tourism
Alternative/Renewable energy	Industrial Machinery, Equipment & Tools	Plastics	Transportation
Pharmaceuticals	Consumer Electronics	Building & Construction Materials	Food & Tobacco
Business Machines & Equipment	Ceramics & Glass	Minerals	Warehousing & Storage
Software & IT services	Engines & Turbines		Consumer Products
Aerospace	Non-Automotive Transport OEM		Paper, Printing & Packaging
Medical Devices			Business Services
Biotechnology			Leisure & Entertainment
Space & Defense			Textiles
			Beverages
			Software & IT services
			Wood Products
			Healthcare

Notes: Five industrial activities (Design, Development & Testing, Headquarters, ICT & Internet Infrastructure, Manufacturing and Research & Development) of Software & IT services are classified as high-tech sectors, and the others are classified as the low-tech sectors.

Table A.3: Classification of developed countries and undeveloped countries

Developed countries and regions	Undeveloped countries and regions
United States, Japan, Germany, China (Taiwan), China (Hong Kong), South Korea, Singapore, UK, France, Netherlands, Switzerland, Canada, Italy, Finland, Sweden, Australia, Spain, Kuwait, UAE, Denmark, Saudi Arabia, Belgium, Bahrain, Austria, Israel, Norway, Luxembourg, Ireland, Iceland, New Zealand, Qatar, Portugal, Chile, Poland, Greece, Bermuda, Cyprus, Hungary, Czech Republic, Estonia, Latvia, Liechtenstein, Slovenia, Oman, Bahamas, China (Macau), Mauritius, Panama, Slovakia, Lithuania, Monaco, Croatia, Romania, Cayman Islands.	Malaysia, India, Indonesia, Thailand, South Africa, Russia, Philippines, Brazil, Iran, Turkey, Mexico, Samoa, Vietnam, Venezuela, Kazakhstan, Nigeria, Ukraine, Belarus, Pakistan, Lebanon, Peru, Cuba, Ecuador, Egypt, Kyrgyzstan, Laos, Morocco, Togo, Yemen, Tunisia, Armenia, Argentina, Kenya, Ghana, Angola, Fiji.

Table A.4: Classification of Value Chain based on industry activity

Industry Activity	Value Chain
Design, Development & Testing	R&D
Research & Development	(Upstream)
Construction	
Electricity	Manufacturing
Extraction	(Midstream)
Manufacturing	
Business Services	
Customer Contact Centre	
Education & Training	
Headquarters	
ICT & Internet Infrastructure	
Logistics, Distribution & Transportation	Sales &Service
Maintenance & Servicing	(Downstream)
Recycling	
Retail	
Sales, Marketing & Support	
Shared Services Centre	
Technical Support Centre	

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Hidden Champions Supports and Corporate ESG Performance: Evidence from China

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Hidden Champions supports and corporate ESG performance: Evidence from China

Abstract

This paper aims to explore whether and how Hidden Champions (HCs) supports prompt small- and medium-size enterprises' (SMEs) ESG engagements, based on a sample of 180 Chinese listing HCs matched with non-CHs over 2016 - 2021. We find that firms selected as HCs are prone to have better ESG performance. Our mechanism tests show that supporting HCs could indeed promote firms' ESG performance through reducing corporate financial constraints and enhancing corporate governance quality. Moreover, the positive impact of supporting HCs is weaker when the Chinese firms having more political connections, and when firms invested by private equity firms. Our findings are robust across a set of additional analyses.

Keywords: Hidden champions; ESG performance; Financial constraints; Corporate governance

Introduction

In recent years, hidden champions (HCs) are of increasing attention for their great importance in the economy growth across the world (Simon, 1990; 1996). While Germany is regarded as a leading country in cultivating HCs (Witt and Carr, 2014), many other countries started to follow these strategies. Among them, China has launched a set of financial and non-financial policies to support HCs, as one channel to build an innovation-oriented country (China Quality Supervision, 2020). Specifically, the local governments provide attractive supporting policies to HCs,

involving direct cash incentives, tax reduction, bank loan interest refund, management training fund and so on. For example, the government of Zhejiang Province provides HCs with a direct cash reward of RMB 500,000 at most, a lower corporate tax at 15%, the priority in receiving credit loans and related fiscal supports to cover interests, a maximum management training fund of RMB200,000, and a maximum marketing subsidy of RMB200,000.[1]

Corporate environmental, social, and governance (ESG) engagement is viewed as an important factor when stakeholders evaluate a firm (Aguilera et al., 2007; Campbell, 2007). However, small- and medium-sized enterprises (SMEs) are generally less likely to have a high ESG score in comparison with large firms (Drempetic et al., 2020). They usually have less commitments in ESG activities, and are usually lack of resources, talents as well as networks to help them perform well (Campbell, 2007; Harjoto and Wang, 2020). This study aims to investigate whether and how hidden champion policies provided by Chinese government encourage SMEs like HCs to prompt ESG performance.

We suppose that Chinese HCs, as selected by the government, are likely to have higher ESG ratings than counterparties. The positive impact of HC policies on firms' ESG performance may come from two ways. First, we expect the supports they received from the government can decrease the firms' financial constraints that hinder them to engage in ESG activities. Second, the government and regulators may pay more attentions and trainings to HCs, enhancing the external monitoring effect. The HCs may have greater commitments in ESG for reputation and legitimacy concerns, which may influence their future support from the government. To test our hypotheses, we use a dataset of 180 Chinese HCs over 2016–2021, matched with a

[1] Government incentive policies from https://www.163.com/news/article/CHQAM419000187VE.html.

control group of 180 non-HC companies on the basis of industry, size and age.

Literature and Hypotheses Development

HCs supports and ESG performance

ESG engagement is of increasing importance for firms, in terms of sustainable competitiveness, public reputation, as well as regulatory requirements (Aguilera et al., 2007; Becker-Olsen et al., 2006; Campbell, 2007). However, Chinese SMEs may suffer more risks for their ESG activities as compared with large firms, because of the lack of resources (Boisot and Meyer, 2008; Poutziouris et al., 2002; Xiao, 2011). Moreover, they are with less incentives and commitments in ESG activities, while large firms have more reputation concerns (Godfrey, 2005).

We propose that HCs policies can mitigate firms' resource shortage, as well as enhance corporate governance practices, both of which can prompt their ESG ratings. First, HCs are provided with more financial and non-financial resources, which supports their ESG activities. It seems that HCs have easier access to funds needed for ESG activities than other types of firms. China's hidden champion-fostering policies include direct cash reward, reduced tax burdens borne by HCs, and favorable financing service, all of which bring HCs with more capital injection. Such inclination of resources makes HCs suffer from reduced financial constraints and engage in ESG activities.

Second, HCs receive more attentions from government and the public, which may encourage them to have better ESG performance. Under close monitor, the HCs are motivated to behave better and invest more in ESG for reputation and legitimacy concerns, which may affect the future HCs selection. Moreover, with the professional training program from government, HCs are able to form an effective governance

system, which directly contributes to “G” rating in the ESG scoring. These all promote HCs to perform better on ESG activities.

H1: If a Chinese firm is selected as a hidden champion, its ESG performance tends to be better.

The mechanism of HCs supports on ESG performance

In this section, we would like to investigate our proposed arguments that how HCs policies could improve Chinese SMEs’ ESG performance.

First, government subsidy for HCs provides notable financial supports from the government. In the face of debt and equity gaps, enterprises may reject or scale down the ESG project. Prior studies show that subsidies help to stimulate CSR activities and thus increase investment on ESG project (Jia and Liu, 2014).

Second, the title of HC provides a positive signal about firm quality/background and results in better access to external financing. Due to information asymmetries and uncertainty, social funds sometimes have difficulties in selecting investment projects (Xiao, 2011). The title of HC may be an observable signal/certification of corporate quality because the government officials know better and more instantly about the information. Alternatively, HCs are facilitated to get more financial resources and invest enough capital on ESG projects.

Third, HCs get more favorable tax treatment. Prior studies show that tax rate is negatively associated with CSR activities (Gandullia and Piserà, 2020). While Chinese HCs can enjoy less tax or other preferential policies, which, to some extent saves the corporate expenses and reduces the financing constraints, these firms will spare more money to put into ESG activities.

H2a: The positive impact of HCs supports on Chinese firms' ESG performance

is mediated through reduced financing constraints.

Above we conjecture that HCs policies helps relieve financial constraints of Chinese HCs. Next, we investigate whether HCs policies improve their corporate governance practices, which are directly related to the "G" score in ESG ratings.

First, we observe that regulatory departments will regularly track and supervise HCs, as well as submit information about the HCs. Under the close monitor, these firms are able to increase information disclosure quality and mitigate potential fraud, which decreases the legitimacy issue arising from opaqueness and manipulation. Such enhanced monitoring and corporate governance help the company behave better in ESG activities.

Second, when the Ministry of Industry and Information Technology of China announced the list of HCs, all sectors of society began to pay attention to these enterprises. HCs are highly motivated to regulate corporate behavior for career and reputation concerns, as well as next hidden champion assessment.

Third, HCs will be trained for an effective corporate governance mechanism after being selected. The government conducts training programs for HCs leaders to strengthen their governance capabilities. Zhejiang Provincial Government hired professional institutions for these leaders to improve their management level. Further, government also encourages HCs to operate "green", such as developing green manufacturing, circular economy, and resource conservation and recycling, advocated by Heilongjiang provincial government. These measures all encourage HCs to carry out ESG activities.

H2b: The positive impact of HCs policies on Chinese firms' ESG performance is mediated through higher quality of corporate governance.

The different impacts of HCs supports among firms with different social relations

The title of HCs is more valuable for firms without political connections than those politically connected companies in China simply because Chinese SMEs without political connections face a different institutional environment (Schweizer et al., 2017). Firms with political connections mean that their senior managers are generally prior or current government officials or bureaucrats appointed by the government (Chen et al., 2017). In contrast, firms without political connections are motivated to apply for the HCs to pursue financial and non-financial resources, due to the lack of financial resources in China. If these entrepreneurs manage to get the title of HCs, it may help address financial distress problems, gain regulatory assistance, and perform better on ESG.

H3a: The positive impact of HCs supports on Chinese firms' ESG performance is weaker for firms with political connections.

Another moderating factor affecting ESG project is private equity investment. Compared with enterprises not invested by private equity firms, enterprises with private equity investment have more sufficient capital and more professional external supervision. Private equity can not only reduce financing constraints, but also private equity investors use their professional management knowledge and rich investment experience to influence the investment decisions of the invested enterprises (Gompers, 1995). For meeting the goal of high risk and high return, private equity investors will actively participate in the operation and management of enterprises, and thus affecting their ESG investment. For example, private equity investors can send independent directors to supervise and motivate corporate governance and promote

them to pay more attention to corporate social responsibility. (Celikyurt et al., 2014)

H3b: The positive impact of HCs supports on Chinese firms' ESG performance is weaker for firms with private-equity investors.

Method

Sample and data

To test the three hypotheses stated above, we followed Cressy et al. (2007) and created an original dataset consisting of a matched sample of hidden champion companies (HCs) and non-HCs in China over the period 2016–2021. We focused on calendar year 2016 as the starting point as the Ministry of Industry and Information Technology has released the list of HCs on its official website since 2016. For establishing a proper "control group" of other firms, we use the matching technique and take into account their specific industry, size structure and age (Rammer and Spielkamp, 2019).

HCs data is extracted from the official website of the Ministry of Industry and Information Technology of China, including 180 listed HCs. ESG ratings, private equity, corporate governance data and other financial information are from the China Securities Market and Accounting Research (CSMAR) database.

Measurements

Dependent variable

Following Barros et al. (2022), we use four different measures of ESG, all coming from Huazheng ESG index. First, we use the combined ESG score, which captures all of its pillars. *ESG Scores* is defined as a nine-point scale (1-9), from the lowest (1) to the highest (9). Then, we use each score singly, namely, environmental,

social, and governance. All measures range from 1 to 9.

Independent variable

Our main measure of HCs (*HCs*) is a dummy variable, which equals 1 if the firm is selected as the hidden champion in the year, and otherwise 0.

Moderators

The moderators in this study include *Political Connection* and *Private Equity*. *Political Connection* equals to 1 if the positions of CEOs, board chairs, directors, and other senior officers of the sample firms are in government (administrative) or National People's Congress (NPC), Chinese People's Political Consultative Conference (CPPCC), and the Communist Party of China (CPC) system which can affect policy-making process (Su et al., 2019). The adopt of private equity investment (*Private Equity*) is a dummy variable, which equals 1 if the company is invested by a private equity company, otherwise 0 (Cressy et al., 2007).

Model

First, we used an OLS model to test our hypothesis H1 as follows.

$$ESG\ Scores = \alpha_0 + \alpha_1\ HCs + \alpha_2\ Controls + \alpha_3\ Industry + \alpha_4\ Year + \varepsilon \quad (1)$$

The dependent variable in the model is *ESG Scores*, while independent variable is *HCs* in the year t. We also controlled industry and year fixed effects. Robust standard errors are clustered at firm level.

Second, to examine the mediating role of financial constraints and quality of governance, we followed Baron and Kenny (1986) using three sets of regression models as shown in Equation (1) - (3).

$$Financial\ Constraints/\ Quality\ of\ Governance = \alpha_0 + \alpha_1\ HCs + \alpha_2\ Controls + \alpha_3\ Industry + \alpha_4\ Year + \varepsilon \quad (2)$$

$$ESG\ Scores = \alpha_0 + \alpha_1\ HCs + \alpha_2\ Financial\ Constraint/\ Quality\ of\ Governance + \alpha_3\ Controls + \alpha_4\ Industry + \alpha_5\ Year + \varepsilon \quad (3)$$

Third, we used interaction terms to investigate the moderating effect of *Political Connection* and *Private Equity* as shown in Equation (4) and (5) respectively:

$$ESG\ Scores = \alpha_0 + \alpha_1\ HCs + \alpha_2\ HCs \times Political\ Connection + \alpha_3\ Political\ Connection + \alpha_4\ Controls + \alpha_5\ Industry + \alpha_6\ Year + \varepsilon \quad (4)$$

$$ESG\ Scores = \alpha_0 + \alpha_1\ HCs + \alpha_2\ HCs \times Private\ Equity + \alpha_3\ Private\ Equity + \alpha_4\ Controls + \alpha_5\ Industry + \alpha_6\ Year + \varepsilon \quad (5)$$

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Does the Belt and Road Initiative Improve CBA Performance of Chinese MNEs?

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Does the Belt and Road Initiative Improve CBA Performance of Chinese MNEs?

ABSTRACT

Despite the amount of cross-border acquisition (CBA) of Chinese multinational enterprises (MNEs) is booming, the high premium is accompanied by a low CBA success rate. In such a context, the Belt and Road Initiative (BRI) contributes significantly to the CBA performance of Chinese enterprises. This paper uses quasi-natural experiment and DID approach to investigate the impact of the BRI on the CBA performance of Chinese MNEs. We find that BRI has a positive effect on CBA performance in countries along the route, the results are still valid after a series of robustness tests. We further did heterogeneity test and find that the positive impact of BRI is more salient on private enterprises, high-tech enterprises, firms with TMT's international experience, and firms under digitalisation.

Keyword: BRI; CBA; performance; DID; legitimacy

INTRODUCTION

In September 2013, China launched the Belt and the Road Initiative (BRI), aiming to develop win-win cooperation and common prosperity with countries along the route. BRI links at least 71 countries by rail and sea and is estimated to involve investments of over USD 1 trillion by 2027 (J. Li, Van Assche, Li, and Qian (2022), Li, Liu & Qian, Li, Liu, et al., 2019; Macaes, 2018). In 2018, as stated by Mr. Xi Jinping, the President of China, BRI is becoming a major milestone for China to participate in global openness and cooperation, improve the global economic governance system, and promote common development and prosperity[1]. Since the implementation of BRI, China's outward foreign direct investment (OFDI) in countries along BRI has grown steadily and significantly, showing that BRI has opened a new path for Chinese enterprises to 'go global' and has made an important contribution to China's OFDI. In terms of OFDI patterns, the growth rate of greenfield investment by Chinese enterprises in countries along BRI has slowed down year by year, while the growth rate of CBA by enterprises in countries along BRI has

[1] On August 27, 2018, Xi Jinping delivered speech in the 5th annual conference of BRI promotion.

increased significantly, with increasingly more enterprises choosing CBA instead of greenfield investment (Du & Zhang, 2018).

Cross-border acquisition (CBA) is an important part of BRI and facilitates Chinese companies to go global. BRI provides an important historical opportunity for CBA in the context that the global value chain is restructuring, the international divisions of labour are refined, and Chinese enterprises urgently need to upgrade their industries. However, the rapid growth of CBA involving emerging economies often accompanies a high failure rate (Zhou, Xie, & Wang, 2016). To address this paradox, literature explores the factors and mechanisms that influence the success and failure of CBA in the pre- and post-CBA performance from the perspectives of the political environment, institutional distance, cultural distance, internationalization experience, and resource endowment of the host country (e.g. Zhang et al., 2011; Xie et al.,2017). While the findings on CBA performance are mixed. Some studies found that political environment, institutional distance, cultural distance, the degree of marketisation in the host country, and internationalisation experiences of firms can significantly affect CBA performance (Bauer & Matzler, 2014; Dikova & Sahib, 2013; Ellis et al., 2017; Huang et al, 2017). These studies show that the better institutions of the host country, the smaller institutional distance between the two countries, the similar cultural distance, and the rich international experience of the firm will pose positive impacts on post-merger performance (Bauer & Matzler, 2014; Dikova & Sahib, 2013; Ellis et al., 2017; Huang et al, 2017); Others found government support, RMB appreciation and the strategic resource attributes of the M&A target also enhance CBA performance to a certain extent and bring positive short, medium or long-term wealth effects for firms (Chen & Wang, 2014; Bonaime et al., 2018). However, some studies also found that firms' short-term CBA market performance is insignificant and is not positively evaluated by the market, firms' resource endowment and M&A deal design do not improve long-term market performance, and some studies even found significant wealth loss (e.g. Bertrand & Betschinger, 2012).

Given the mixed results in literature, it is relevant and crucial to explore if certain contexts and policies would drive Chinese MNEs' CBA performance. Jointly influenced by the external economic environment, industrial environment and enterprises' internal environment, Chinese MNEs face great risks and challenges in OFDI activities, which adds uncertainties to the implementation of the 'go global' strategy. BRI has received widespread academic attention since its initiation because it is implemented from the top level of national design and actively promotes the 'go global' strategy at China's national level. From

a macro perspective, literature explores how the background, framework, and development strategies of BRI impact trade, culture, investment, supply chains, and transport networks from a macro perspective (e.g. Huang, 2016; Du & Zhang, 2018; Ma, 2022); From a micro perspective, the impact of the BRI on industrial upgrading, R&D innovation, the promotion of FDI, investment risks, and international market entry strategies from the micro perspective of enterprises (e.g. Jin et al., 2021; Du & Zhang, 2018; Wang et al., 2021).

As an important part of OFDI, CBA is bound to be greatly influenced by BRI. CBA of Chinese MNEs in the context of BRI face legitimacy challenges in host countries mainly due to the 'liability of origin' and BRI's non-commercial objectives. Specifically, emerging economy MNEs (EMNEs) are often characterised by poor country image, weak corporate governance practices and low accountability (Bartlett & Ghoshal, 2000; Luo & Tung, 2007). Moreover, the institutional distances, defined as the regulatory, cognitive and normative distances between home and host institutions (Kostova & Zaheer, 1999), could raise challenges given information asymmetry, less understanding, poorer abilities in identifying and forecasting uncertainties, etc. The final aspect is the BRI's non-commercial objectives (Li et al., 2022). In addition to commercial motives which foster the internationalization of China's currency, manage excessive production capacity, etc. (Li et al., 2022), non-commercial motives can raise tension between China and host countries, especially when the companies are SOEs (Huang, Shen, & Zhang, 2020; Li, Li, & Wang, 2019). Given the legitimacy challenges, literature pays very little attention on how BRI would impact CBA activities of Chinese MNEs (Liu, Su, Wang, & Huang, 2020).

In realising the gaps in literature and theoretical and managerial implications, this research tries to deepen our understanding by addressing the following research questions: *does BRI increase CBA performance? whether BRI impact private firms and SOEs in the same way? Whether high-tech firms benefit more from BRI? How digitalisation of firms and TMT international experience would increase the CBA performance of BRI projects?*

To address these research questions, we collect Chinese MNEs' CBA data ranges from 2009 to 2019. Considering BRI as a specific policy event for quasi-natural experiment, we adopt DID approach to evaluate the impact of BRI on Chinese MNEs' CBA performance. The study further investigates the differences in the impact of BRI on the CBA performance of Chinese firms from the perspective of firm heterogeneity. We find that BRI significantly promotes CBA performance of Chinese enterprises

especially those in countries along the BRI route. After a series of robustness tests including replacing the proxy variables, removing the sample observations in the year of the policy, removing the observations where the host countries are developed countries along BRI, and the propensity matching score test, the findings still hold. We further did heterogeneity tests and find that BRI has a more significant impact on CBA performance of private firms, high-tech firms, firms with TMT's international experience, and firms undergoing digital transformation in the countries along the route.

We make three contributions to the literature. First, we integrate multiple theoretical lenses including legitimacy perspective and classic management theories such as upper-echelons theory, to jointly explore the effectiveness and performance of CBA projects under BRI. CBA activities of Chinese MNEs face legitimacy challenges due to the negative image of the home country, institutional distances (Kostova & Zaheer, 1999) as well as potential tension raised by non-commercial objectives of BRI (Li et al., 2022). CBA activities are exposed to complicated global environments, indicating that integrated theoretical lenses are required for this study. These theories and perspectives differ in their views, but they complement each other and offer an integrated perspective of view to explain Chinse MNEs' CBA activities.

Second, this research adds insights to BRI literature by exploring how digitalisation and technologies would increase CBA performance. Digitalisation and technologies are receiving growing attention in recent literature given them being regarded as firm-level capabilities that are becoming increasingly significant in a more turbulent global environment. The Chinese government added the Digital Silk Road to the BRI program in 2015, aiming to improve communication networks, AI capabilities, cloud computing, e-commerce, e-payment system, etc., in the host countries (Li et al., 2022; Ly, 2020). Digital Silk Road also raises concerns among US and European countries on whether these programs would allow China to become a digital standard maker in BRI host countries (Hemmings, 2020; Li et al., 2019). However, whether BRI is still beneficial to digital and high-tech firms' CBA performance is still an underdeveloped area. Our result support that BRI can improve digitalised and high-tech firms' CBA performance by mitigating cost, and increasing monitoring efficiency and transparency, which facilitates CBA groups to achieve legitimacy and better performance.

Finally, we contribute to IB literature by offering insights into how EMNEs implement CBA in BRI countries. Conventional IB literature has widely explored how MNEs from developed economies

(DMNEs) invest in emerging economies based on firm ownership advantages (Dunning, 1980), and more recently increasingly literature shed light on how EMNEs invest in advanced economies by making linkage, leveraging resources and learning (LLL paradigm) from more advanced economies (Mathews, 2006), with springboard purposes and perspective (Luo & Tung, 2018). While currently there is very little attention has been spent on how EMNEs' CBA performance is in BRI countries which are dominated by emerging economies. In our study, we suggest that high-tech MNEs' investing in BRI countries is mainly for market-seeking and efficiency-seeking motives (Dunning, 2008), which can be distinct from Chinese companies who invest in more advanced economies, tax havens, or off-shore financial centres.

The remaining part of the study is structured as follows: Part 2 is the theory development chapter which includes literature review and hypotheses; Part 3 is the methodology chapter; Part 4 presents empirical results, heterogeneity analysis and robustness tests; Part 5 is the conclusion of the paper.

1. THOERY DEVELOPMENT

OLI paradigm states that MNEs from developed countries invest abroad when they have comparative advantages in terms of Ownership, Location and Internalization (Dunning, 1980). However, EMNEs do not often have such advantages. During their overseas expansion, EMNEs often suffer from the 'liability of origin' defined as 'a credibility and legitimacy deficit in the eyes of host country stakeholders who [are] even more circumspect due to inefficient or missing knowledge of foreign emerging market multinational firms, their quality and safety standards, and the like' (Madhok & Kayhani, 2012; p. 31). Numerous studies have shown that liability of origin set barriers to the CBA success and performance (e.g. Peng et al., 2008; Luo et al., 2010; Zhang et al., 2011) and constrain the resource integration and legitimacy acquisition in post-CBA period. On one hand, the liability of origin can be attributed to relatively poor home country institutions that characterised EMNEs with poor country image, weak corporate governance practices and low accountability (Bartlett & Ghoshal, 2000; Luo & Tung, 2007). On the other hand, 'liability of origin' is caused by the institutional distances defined as the regulatory, cognitive and normative distances between home and host institutions (Kostova & Zaheer, 1999), which leads to a legitimacy gap arises from the pressure caused by the distance between home and host countries' political, economic, cultural and legal systems. The regulatory distance can be substantial for EMNEs to

conform to local regulations and rules, especially when these EMNEs lack previous CBA experiences. The normative distance raise difficulties in embracing socially accepted standards or avoiding public or professional sanctions and cultural-cognitive distance increases difficulties in social interactions (Kostova & Zaheer, 1999). Given information asymmetry and less understanding of the host country, EMNEs would find it difficult to identify and forecast uncertainties in the host countries, and thus, difficult to obtain legitimacy in host countries. However, managing legitimacy is challenging as it heavily relies on communications with various stakeholders (Suchman, 1995) while establishing and maintaining legitimacy is crucial for Chinese MNEs to enter new markets through CBA and to achieve sustainable benefits in post-CBA period.

In this context where the legitimacy gap leads to competitive disadvantages of Chinese MNEs, government involvement may provide an alternative route and policy support for Chinese MNEs to expand abroad (Liu & Wang, 2020). From a political economic perspective, BRI includes both commercial and non-commercial objectives of Chinese government. Specifically, 'China's commercial motives for embarking on BRI include the internationalization of China's currency, the effective use of its foreign currency reserves, the reduction of Chinese excess production capacity, and the development of China's Western areas. The non-commercial aims include exporting its development model, diffusing its political influence, bolstering regional stability, and improving China's energy security. All of these are aimed at increasing China's sphere of influence in the region.' (Li et al., 2022) Regarding BRI as an important tool for the government to optimise resource allocation and achieve strategic goals, its implementation can directly or indirectly change the external environment where MNEs face, thus influencing their investment behaviour.

Most of the countries along BRI are developing countries with varying levels of economic development, lagging infrastructure development, low levels of investment facilitation, inter-country trade differences, and low levels of financial development, which hinder the growth of Chinese companies' investment (Liu et al., 2017). BRI would facilitate to improve the investment environment along the route by emphasising the 'Five Links' which aims to jointly build an open, inclusive, balanced, and inclusive framework for regional economic cooperation. In the area of policy coordination, BRI, as a bilateral free trade agreement, includes a higher level of political cooperation, government support, and policy coordination than traditional free trade agreements (Du and Zhang, 2018). On the one hand, it can effectively reduce policy

uncertainty and political risks in host countries (Du & Zhang, 2018); on the other hand, it can effectively alleviate hidden barriers for Chinese MNEs to enter emerging economy markets, enhance the level of OFDI facilitation, reduce transaction costs and improve investment efficiency (Baier & Bergstrand, 2007). In the area of facility connectivity, by strengthening investment in infrastructure construction in countries along the route, BRI enhances trade facilitation, reduces costs in terms of factor turnover and information access, creates higher profit margins for enterprises, implants Chinese manufacturing standards, industrial technologies, management models and experiences in countries along the route, all of which create favourable investment opportunities for Chinese enterprises (Huang, 2019) and form a relatively complete transportation infrastructure network. In the area of unimpeded trade, BRI countries have been extended from Asia and Europe to Africa, Latin America, the South Pacific, and other regions, weakening the trade barriers between China and the countries along the route through the establishment of international platforms and carriers for joint negotiations. In the area of financial integration, the Chinese government has led the establishment of policy banks and the Silk Road Fund, aiming to provide stable medium- and long-term financial support for enterprises' FDI. The implicit guarantee from the government not only raises the credit guarantee expectations of the initiative-supported enterprises and directs credit resources towards the initiative-supported enterprises, but also attracts capital from social investors and significantly reduces the financing constraints of the initiative-supported enterprises, which in turn provides financial guarantees for the completion of M&A transactions and later integration. In the area of people-to-people bond, BRI has made a positive contribution to promoting cultural integration and building political mutual trust between China and the countries along the route (Liu et al., 2020), weakening the constraining effect of geographical distance on the geo-economic development of China and the countries along the route (Hu et al., 2020), thus breaking the previous 'path dependence' of Chinese enterprises on OFDI and this has led to a break in the 'path dependence' of Chinese enterprises in OFDI, which has transformed the disadvantages of outsiders' industrial chains into advantages while building their industrial chain networks and gradually forming OFDI clusters (Ma & Liu, 2020), realising industrial agglomeration and scale effects. Therefore, both in terms of formal and informal institutions, BRI helps to enhance the legitimacy of CBA transactions in the countries along the route, which in turn contributes positively to the improvement of CBA performance. This leads to our first hypothesis:

Hypothesis 1: BRI can significantly improve Chinese MNEs' CBA performance in countries along the route.

The Chinese government, private enterprises and state-owned enterprises (SOE) are three key actors of BRI. Primarily, the Chinese government plays a dominating role in BRI's design, and political and economic governance (Hu et al., 2019) as well as an orchestrating role by controlling financial resources (Ghossein, Hoekman, & Shingal, 2021; Li et al., 2019). Chinese SOE is the second key player in BRI (Li et al., 2019) and is the vital force behind Chinese OFDI in 2016 (Buckley et al., 2018). More than 80 percent of the BRI projects were allocated to Chinese enterprises with most of them being SOEs (Ghossein et al., 2021).

There are significant differences in political affiliations and resource endowments between SOEs and private firms. Despite the natural ties between SOEs and the government helping them to receive more favourable policies and financial support than private enterprises, the excessive strategic and social policy burdens may lead to more inefficient investments to implement state policies, resulting in increasing concerns in host countries. Moreover, the 'absence of the owner', defined as the unclearness of who to be responsible for state assets of SOE (Shi & Liu, 2012), together with the bureaucratic management system further raise doubts from host countries on whether SOEs can integrate and produce positive economic results during post-CBA stages and exacerbate legitimacy concerns about SOEs' CBA activities. Moreover, potential tension can also be raised in terms of BRI's non-commercial objectives (Huang et al., 2020; Li et al., 2019; Li et al., 2022). Chinese SOEs are perceived to be excessively opaque and the beneficiaries of unfair support by the Chinese government (Li et al., 2019; Li et al., 2022), leading to a bigger legitimacy gap than private firms. Therefore, state ownership of SOEs undermines the legitimacy of CBA transactions in the countries along BRI compared to private enterprises and therefore mitigates CBA performance.

Hypothesis 2: in countries along the route, BRI poses a more significant positive impact on CBA performance of private enterprises than that of SOEs.

High-tech enterprises are important carriers of promoting scientific and technological progress, industrial restructuring, transformation and upgrading, and are often important actors in the implementation and execution of industrial policies. High-tech enterprises face challenges including higher negotiation complexity and stronger political sensitivity when conducting CBA, making them difficult in passing the security review of governments in developed countries and overcoming regulatory legality.

However, most countries along the BRI route are operating under low-economic models that require resource and primary product exports (Deng, Wang, Li, & Liang, 2020) and are likely to have lower legitimacy concerns over Chinese MNEs' strategic-asset-seeking objectives. Given the different investment context from LLL paradigm and springboard perspectives that EMNEs try to acquire strategic assets in developed economies, CBA in BRI countries of Chinese MNEs might not be with strategic asset seeking or springboard objective. For example, despite Huawei has been facing great legitimacy challenges in western countries, it is less likely to be banned or even embraced in certain developing countries such as Indonesia, Saudi Arabia, Turkey, etc (L. Li & Sun, 2020). Moreover, Huawei has also been involved in a fibre optic network reconstruction project in Guinea (Deng et al., 2020) and other developing countries, suggesting that the legitimacy concerns can be lower in these countries.

Unlike MNEs investing in advanced companies, investment of high-tech enterprises in BRI countries can mainly be for market seeking and efficiency seeking. Primarily, Chinese high-tech companies invest in BRI countries can be market seekers who supply goods or services, trying to exploit or promote new markets overseas. It is getting increasingly necessary to treat market seeking as MNEs' global production and market strategy, to both exploit technologies overseas and to physically present in foreign markets (Dunning, 2008). Moreover, efficiency-seeking can be another motive for these high-tech companies who can take advantage of relatively lower labour and energy cost in BRI countries – with 'capital-, technology-, and information-intensive value-added activities being concentrated in the former [more advanced countries], and labour- and natural resource-intensive activities in latter [less developed countries].' (Dunning, 2008)

Moreover, BRI could help high-tech companies to gain legitimacy in countries along the route by manipulating the investment environment. MNEs can gain legitimacy through conforming to environment, selecting among environment, and manipulating environment (Suchman, 1995). While the Digital Silk Road, as an important part of the BRI, provides digital infrastructure and digital security products for recipient countries to narrow the digital divide. By providing aid, political support and other assistance to BRI countries, Chinese MNEs' investment environment in the BRI host countries is improved; also, given the resources and infrastructure requirements of BRI countries, these high-tech companies face less legitimacy gap in comparison to other firms. Therefore, Chinese MNEs are likely to face less legitimacy resistance while enjoying strong policy support from their home country. Therefore,

with the Chinese government trying to build a better investment environment in the host countries, there would be relatively lower legitimacy concerns for high-tech companies in BRI countries. Therefore,

Hypothesis 3: in countries along the route, BRI poses a more significant positive impact on CBA performance of high-technology firms than that of traditional industrial firms.

Organisational behaviour is led by routines that stem from experience (Nelson & Winter, 1982) and feedback on performance (Greve, 2003), indicating that organisations' international experience would impact subsequent CBA performance (Haleblian, Kim, & Rajagopalan, 2006). Specifically, prior international experience of Chinese MNEs would mitigate the negative impact of institutional distances on CBA performance by providing MNEs with a better understanding of host countries' legal systems, cultures and market environments. Based on upper echelon theory, in complicated organisations such as MNEs, the strategic decision-making process requires the collective inputs of multiple executives, therefore, TMT's international experience is expected to impact the outcome of MNEs (Hambrick & Mason, 1984; Piaskowska, Trojanowski, Tharyan, & Ray, 2021), such as literature has documented that TMT's international experience is associated with firm internationalisation (e.g. Sambharya (1996); Tihanyi, Ellstrand, Daily, and Dalton (2000))

TMT's international experience is often regarded as the valuable asset (Carpenter, Sanders and Gregersen, 2001; Le and Kroll, 2017) which would equip executives with knowledge and abilities that are crucial for a company to pursue international opportunities (Carpenter, Sanders and Gregersen, 2001; Le and Kroll, 2017). TMT's international experience can improve the awareness of international opportunities (Tihanyi et al., 2000), mitigate 'psychic distance', develop a superior ability for operations overseas (Nielsen & Nielsen, 2011), and establish informal networks (Athanassiou & Nigh, 2002). Moreover, TMT with cumulated knowledge can better deal with operations overseas, and thus taking OFDI as less risky compares to TMT without international experience (Carpenter et al., 2001) (Nielsen & Nielsen, 2011). Therefore, international experience of TMT of Chinese MNEs would facilitate companies' CBA performance given that these TMT's expertise to cope with foreign investment would facilitate them to better understand host country regulations and rules, manage external legitimacy, weaken the challenges raised by institutional distance, mitigate the cost in terms of information collection and communication prior and during CBA. Therefore,

Hypotheses 4: in countries along the route, BRI poses a more significant positive impact on CBA performance of firms whose TMT has international experience.

Digitalisation would increase both legitimacy within MNEs' networks and in host countries. Digitalisation has reshaped organisations' resources and capabilities which lead to fundamental changes in the forms of organisations, business models, and strategic decisions (Bharadwaj, EI Sawy, Pavlou, & Venkatraman, 2013). Compared to domestic M&A, CBA in countries along the route face more complex political, legal and economic environments while digitalisation offers MNEs with lower search costs, replication costs, transportation costs, tracking costs and verification costs (Goldfarb & Tucker, 2019), all of which facilitate MNEs to gain legitimacy during their CBA activities. Primarily, the low search cost of digitalisation would make information comparison easier, which increases the matching quality between acquirers and sellers. The low search cost also enables headquarters to more easily monitor activities that take place at a distance and enables front-line employees to get access to information that was only formerly available for individuals at headquarters (Garicano, 2000). Second, as the replication cost of digital goods is zero, digitalised MNEs would be able to provide digital public goods in host countries, which at one hand, signals their skills to potential employers; on the other hand, they are able to sell other services and goods at a premium (Lerner, Pathak, & Tirole, 2006). Third, the lower transportation cost would increase the knowledge flow and the communication between headquarter and subunits that engage in CBA activities, which further mitigate agency cost and potential conflicts between headquarters and front-line managers and employees. Moreover, MNEs could find CBA activities easier to monitor as the overseas operations could be more transparent and individuals' and managers' behaviour are easy to track (Goldfarb & Tucker, 2019). Finally, digitalised firms would be more transparent to the host environment as local stakeholders would find it easier to verify their identity. Compares to non-digitalised firms who try to show credibility by developing a reputation in the form of the brand (Smith & Brynjolfsson, 2001; Tadelis, 1999; Waldfogel & Chen, 2006), digitalisation enables MNEs to show presence and offer credible information to potential customers who would be previously unfamiliar to the MNEs. Therefore, given MNEs can achieve better internal and external legitimacy resulted by firm digitalisation during CBA,

Hypotheses 5: in countries along the route, BRI has had a more significant impact on CBA performance for companies with digitalisation.

2. METHODS

Sample Selection

The BRI was proposed in September 2013 and was truly elevated to the national strategy in 2014, so we set the policy impact time as 2014. Considering the impact of the 2008 financial crisis and long enough annual comparison before and after the policy, the sample period is from 2009 to 2019. Our main data source is from the CSMAR database, the World Bank database (WDI) and the World Integrated Trade Solutions (WITS) database. To be included in our sample, the acquirers must be an A-share market listed companies in China and the target are overseas companies, and the CBA are finished successfully. We exclude the samples of financial or ST category, the samples with missing core variables, the sample with negative owner's equity, the sample where the host country is the tax haven, and the sample where the ratio of M&A transactions to the total assets of the companies is less than 0.5%. On this basis, all continuous variables were winsorized at both ends of the 1% quantile to prevent the effect of extreme values, and finally, 3220 CBA events were obtained.

Empirical methodology and definition of variables

In recent years, difference-in-difference (DID) approach has been widely used in studies to assess the effects of policy implementation（Athey & Imbens, 2006）, and the existing literature suggests that the BRI can be considered a valid quasi-natural experiment, and that DID approach have been commonly used in studies of the DID approach is also commonly used in studies of the economic consequences of the BRI. Therefore, we also investigated the impact of the BRI on the CBA performance of Chinese companies by constructing a DID approach, using the proposal of the BRI as a quasi-natural experiment. The experimental group is composed of those M&As in countries and regions along the BRI route, and the control group is composed of those M&As in countries and regions, not along the BRI route. According to the basic principle of DID model, model 1 is set as follows.

$$BHAR_{it} = \beta_0 + \beta_1 Post_{it} + \beta_2 Treat_{it} + \beta_3 DID + \beta_4 Controls_{it} + \Sigma\text{Industry} + \Sigma\text{Year} + \varepsilon_{it} \quad (1)$$

Further, the heterogeneity of the characteristics of the acquiring firms is likely to affect the CBA performance under the BRI. So, we examined the impact of the BRI on the performance of different

types of companies in CBA by triple difference model (Olden & Moen, 2022). According to the firm-specific advantages, model 2 is set as follows.

$$BHAR_{it} = \beta_0 + \beta_1 Post_{it} + \beta_2 Treat_{it} + \beta_3 DID + \beta_4 FSAs + \beta_5 FSAs * Post + \beta_6 FSAs * Treat + \beta_7 FSAs * DID + \beta_8 Controls_{it} + \Sigma\text{Industry} + \Sigma\text{Year} + \varepsilon_{it} \quad (2)$$

The explanatory variable BHAR is the excess return of firm i in year t when it buys and holds for 12 months. Among the main independent variables, Post is a dummy variable that takes the value of 1 if the CBA event occurs in 2014 and later years, and else 0; Treat is a dummy variable that takes the value of 1 if the CBA event belongs to the target firm in BRI countries and regions, and else 0; DID is the cross multiplying term of Post and Treat. In the Model 2, FSAs indicate the heterogeneity of acquirers, including the nature of ownership, high-tech companies or not, TMT's international experience, and digitalised or not. Several control variables are included in this paper and are lagged by one period to mitigate endogeneity issues. Concerning existing studies, the control variables in this paper include: Cash holding level (*Cash*), firm size (*Size*), gearing ratio (*Leverage*), firm accounting performance (*ROE*), fixed assets ratio (*FixedAssets*), firm age (*Age*), firm value (*Tobin'Q*), firm growth capacity (*SaleGrowth*), nature of corporate ownership (*SOE*), shareholding of the largest shareholder (*Top1Share*), separation ratio (*Separation*) and industry concentration (*HHI*); deal size (*MAscale*) and payment method (*Payment*) at the M&A transaction level; economic development level (*GDP*) and market development potential (HHI) at the host country characteristics level, market development potential (*EconomicGrowth*), population size (*Population*), trade dependency (*Trade*), and financial development level (*FinancialGrowth*).

ε_{it} is a random error term. β_1 measures the difference in the CBA performance of Chinese companies in non-Belt and Road countries and regions before and after the introduction of the BRI. β_2 measures the difference between Chinese companies' CBA performance in countries along the Belt and Road and other countries before the BRI. β_3 is the DID estimator, which is the focus of this paper, reflects the change of the CBA performance by Chinese companies in countries along the Belt and Road and other countries before and after the BRI. Based on the heterogeneity of acquirers，β_7 measures triple difference on the change of CBA performance by Chinese companies in countries along the Belt and Road and other countries before and after the BRI.

Table 1 Measurement of variables

Variable name	Variable definitions
$BHAR_{12M}$	Abnormal return on purchase and holding of shares for 12 months
Post	1 for 2014 and beyond, otherwise 0
Treat	1 for countries along BRI route, 0 otherwise
DID	*Post and Treat multipliers*
Cash	Net cash flows from operating activities/total assets
Size	Natural logarithm of total business assets
Leverage	Total liabilities/total assets
ROE	Net profit / Shareholders' equity
FixedAssets	Net fixed assets/total assets
Age	(Year of the M&A event - the year the company went public) +1
Tobin'Q	The market value of total assets/book value
SaleGrowth	(Operating revenue for the period - operating revenue for the same period of the previous year)/operating revenue for the same period of the previous year
SOE	1 if the listed company is a state-owned enterprise, 0 otherwise
Top1Share	Number of shares held by the largest shareholder of the enterprise/total number of shares
Separation	Percentage of control of beneficial owners - the percentage of ownership
MAscale	M&A transaction amount/total assets
Payment	Method of payment of consideration for M&A transaction, 1 for cash payment, 0 otherwise
HHI	Herfindahl coefficients, calculated using owner's equity. $HHI = \sum_i^N (\frac{x_i}{x})^2$
GDP	Natural logarithm of the host country's gross domestic product
EconomicGrowth	Host country GDP growth rate
Population	Host country population size
Trade	Trade dependence, [(host country exports + host country imports)/GDP] + 1 taken as logarithm
FinancialGrowth	Level of financial development, host country financial development index

3. RESULT

Descriptive statistics

Table 2 reports descriptive statistics for the main variables. The mean value of the dependent variable $BHAR_{12M}$ is 0.1955, and the variance is 1.6470, indicating that there is a certain difference in the long-term performance level of CBA. The mean value of Treat is about 0.0994, indicating that the number of CBA in the sample to countries and regions along the BRI accounts for nearly 10% of the total.

Table 2 Descriptive statistics of the main variables

variable	mean	sd	min	p25	p50	p75	Max
$BHAR_{12M}$	0.1955	1.6470	-0.1290	-0.0039	-0.0013	0.0021	15.6073
Post	0.6537	0.4759	0.0000	0.0000	1.0000	1.0000	1.0000
Treat	0.0994	0.2992	0.0000	0.0000	0.0000	0.0000	1.0000
DID	0.0655	0.2475	0.0000	0.0000	0.0000	0.0000	1.0000
Cash	0.0501	0.0686	-0.1579	0.0113	0.0509	0.0908	0.2305
Size	22.0843	1.3040	19.8706	21.1108	21.8761	22.8347	25.7540
Leverage	0.4245	0.1986	0.0415	0.2720	0.4194	0.5729	0.8783
ROE	0.0617	0.1554	-0.9595	0.0339	0.0779	0.1225	0.3323
FixedAssets	0.2044	0.1482	0.0022	0.0902	0.1777	0.2884	0.6434
Age	9.4503	6.8069	1.0000	4.0000	7.0000	14.0000	26.0000
Tobin'Q	2.3047	2.0875	0.0000	0.9639	1.7575	2.8392	11.8565
SaleGrowth	0.2443	0.4933	-0.5186	0.0064	0.1488	0.3403	3.1944
SOE	0.2248	0.4175	0.0000	0.0000	0.0000	0.0000	1.0000
Top1Share	34.3471	14.8774	8.1400	23.0450	31.8300	44.9800	73.1300
Separation	5.2918	7.6333	0.0000	0.0000	0.2171	9.2764	29.1774
MAscale	0.0815	0.2198	0.0000	0.0081	0.0222	0.0649	1.8122
Payment	0.9500	0.2180	0.0000	1.0000	1.0000	1.0000	1.0000
HHI	0.0854	0.1014	0.0145	0.0282	0.0472	0.0977	0.6171
GDP	27.6801	2.3423	20.2801	26.3982	27.5075	29.9801	30.6529
EconomicGrowth	3.6330	2.8809	-2.7156	2.0003	2.9273	6.7516	10.6361
Population	4.0537	5.8785	0.0006	0.0718	0.2460	13.3771	13.9771
Trade	4.5466	1.3305	0.0000	3.6541	4.2936	5.9209	6.0950
FinancialGrowth	0.6837	0.1860	0.0000	0.6381	0.7405	0.7821	0.9138

Main analysis

This paper uses the DID approach to examine the impact of the BRI on the CBA performance of Chinese companies through Quasi-natural experiment. Table 3 reports the results of the DID model regression

analysis after controlling for industry and year effects, and the dependent variables $BHAR_{12M}$, $BHAR_{24M}$, and $BHAR_{250D}$ respectively represent the excess return rate of 12 months, 24 months and 250 days of purchasing and holding the shares of companies. Corroborating Hypothesis 1, first, Post is found to be significant and positive (β=0.4875, p<0.01), indicating that after the BRI, Chinese companies' CBA performance in non-BRI countries and regions has been improved significantly. Second, Treat is found to be significant and negative (β=-0.3010, p<0.01), indicating that before the BRI, the CBA performance of Chinese companies in BRI countries and regions was significantly lower than that in non-BRI countries and regions, which reflects the high risk and uncertainty associated with CBA activities in non BRI countries and regions. Third, the coefficient of the cross multiplier DID (Post*Treat), which is the main concern of this paper, is found to be significant and positive (β=0.3426, p<0.01), which indicates that the CBA performance of Chinese companies in countries and regions along the Belt and Road has significantly improved since the introduction of the BRI. Overall, the BRI has significantly improved the CBA performance of Chinese companies, especially in countries and regions along the Belt and Road. Overall, the BRI has significantly improved the CBA performance of Chinese companies, especially in countries and regions along the Belt and Road.

Table 3 Impact of the BRI on the CBA performance

	(1)	(2)	(3)
	$BHAR_{12M}$	$BHAR_{24M}$	$BHAR_{250D}$
Post	0.4875***	14.0861***	0.0574**
	(2.67)	(2.91)	(2.40)
Treat	-0.3010***	-7.8902***	-0.0553***
	(-3.42)	(-3.18)	(-3.99)
DID	0.3426***	7.6417***	0.0624***
	(3.70)	(3.10)	(4.38)
Cash	0.8256***	17.2152**	0.1127
	(2.63)	(2.10)	(1.39)
Size	0.0225*	0.2106	-0.0085**
	(1.89)	(0.64)	(-2.50)
Leverage	-0.1684	-7.5335*	0.0190
	(-1.08)	(-1.86)	(0.76)
ROE	-0.4972***	-13.5982***	-0.0249
	(-3.17)	(-3.32)	(-1.23)
FixedAssets	-0.3449**	-12.3922***	-0.0791**
	(-2.22)	(-3.01)	(-2.43)
Age	-0.0021	-0.0169	-0.0003
	(-1.00)	(-0.31)	(-0.80)

Tobin'Q	0.0426**	-0.2244	0.0010
	(2.57)	(-1.00)	(0.67)
SaleGrowth	0.2314***	5.8095***	0.0247***
	(4.47)	(3.72)	(3.33)
SOE	-0.1197***	-2.4501***	-0.0179***
	(-3.94)	(-3.10)	(-3.32)
Top1Share	0.0049***	0.1304***	0.0007***
	(2.91)	(3.07)	(3.32)
Separation	0.0029	0.2208***	0.0015***
	(1.20)	(2.88)	(2.76)
MAscale	-0.2048***	-2.6980**	-0.0226***
	(-3.79)	(-2.48)	(-2.72)
Payment	-0.0904	1.3754	-0.0120
	(-1.29)	(1.36)	(-1.23)
HHI	0.2790	31.5913**	0.2235***
	(0.75)	(2.52)	(2.94)
GDP	-0.0999***	-0.5645	-0.0125**
	(-2.64)	(-0.45)	(-2.39)
EconomicGrowth	-0.0403**	-1.7777***	-0.0039
	(-2.00)	(-3.13)	(-1.53)
Population	0.0362***	0.6437	0.0042**
	(2.59)	(1.62)	(2.06)
Trade	0.0746**	2.5162***	0.0104***
	(2.42)	(2.80)	(2.92)
FinancialGrowth	-0.2354	-20.6646	0.0366
	(-0.56)	(-1.52)	(0.73)
_cons	1.9051**	8.0337	0.3739***
	(2.07)	(0.28)	(2.58)
Industry effects	Control	Control	Control
Annual effects	Control	Control	Control
N	3220	3220	3220
r2_a	0.0725	0.0706	0.0650

t statistics in parentheses, * $p < 0.1$,** $p < 0.05$,*** $p < 0.01$

Heterogeneity analysis

Model 2 presents our findings on the effects of the heterogeneity of acquirers on the CBA performance under the BRI. Table 4 reports the heterogeneity analysis results.

Table 4 Heterogeneity test

	$BHAR_{12M}$			
	（1） nature of ownership	（2） high-tech companies or not	（3） TMT's international experience	（4） digitalised or not
Post	0.3131	0.7012***	0.1171	0.5555***
	(1.54)	(4.20)	(1.38)	(3.11)
Treat	-0.4848***	0.0913	-0.0912	-0.1165
	(-3.91)	(1.09)	(-0.96)	(-1.26)
DID	0.4962***	-0.0029	0.1511	0.2575***
	(3.92)	(-0.03)	(1.28)	(2.73)
SOE	-0.4329***	-0.1217***	-0.1103***	-0.0942***
	(-5.21)	(-3.90)	(-3.58)	(-3.07)
SOE*Post	0.5221***			
	(4.43)			
SOE*Treat	0.5298***			
	(3.89)			
SOE*DID	-0.4419***			
	(-3.02)			
HT		0.6380***		
		(4.88)		
HT*Post		-0.5266***		
		(-3.75)		
HT*Treat		-0.7620***		
		(-4.05)		
HT*DID		0.6826***		
		(3.31)		
OverseaBack			0.2406**	
			(2.36)	
OverseaBack*Post			-0.2013*	
			(-1.70)	
OverseaBack*Treat			-0.3271**	
			(-2.39)	
OverseaBack*DID			0.2996*	
			(1.93)	
Digital				0.4635***
				(2.68)
Digital*Post				-0.2254
				(-1.19)
Digital*Treat				-0.4809**
				(-2.51)
Digital*DID				0.3344*
				(1.70)

Cash	0.8806***	0.8600***	0.8711***	0.7376**
	(2.73)	(2.68)	(2.70)	(2.37)
lnSize	0.0225*	0.0253**	0.0145	0.0197
	(1.89)	(2.07)	(1.14)	(1.50)
Leverage	-0.1072	-0.0736	-0.1434	-0.1714
	(-0.66)	(-0.46)	(-0.90)	(-1.07)
ROE	-0.5028***	-0.5463***	-0.5062***	-0.4914***
	(-3.23)	(-3.38)	(-3.29)	(-3.28)
FixedAssets	-0.3509**	-0.2113	-0.3245**	-0.3497**
	(-2.25)	(-1.41)	(-2.10)	(-2.22)
Age	-0.0041*	0.0018	-0.0016	-0.0019
	(-1.84)	(0.83)	(-0.77)	(-0.89)
TobinQ	0.0478***	0.0489***	0.0410**	0.0411**
	(2.85)	(2.91)	(2.44)	(2.48)
SaleGrowth	0.2324***	0.2471***	0.2339***	0.2169***
	(4.48)	(4.62)	(4.46)	(4.36)
Top1Share	0.0048***	0.0053***	0.0049***	0.0045***
	(2.81)	(3.07)	(2.88)	(2.82)
Separation	0.0026	0.0024	0.0033	0.0031
	(1.07)	(0.98)	(1.39)	(1.24)
MAscale	-0.2058***	-0.2067***	-0.1980***	-0.2097***
	(-3.84)	(-3.73)	(-3.67)	(-3.91)
Payment	-0.0791	-0.0792	-0.0881	-0.0762
	(-1.14)	(-1.09)	(-1.20)	(-1.10)
HHI	0.2695	0.4307	0.2499	0.3129
	(0.73)	(1.14)	(0.69)	(0.82)
GDP	-0.0959**	-0.0972**	-0.0956**	-0.1162***
	(-2.53)	(-2.55)	(-2.52)	(-3.00)
EconomicGrowth	-0.0387*	-0.0394*	-0.0389*	-0.0399**
	(-1.90)	(-1.93)	(-1.92)	(-1.97)
Population	0.0353**	0.0363**	0.0347**	0.0407***
	(2.51)	(2.54)	(2.46)	(2.81)
Trade	0.0767**	0.0795**	0.0775**	0.0704**
	(2.48)	(2.55)	(2.50)	(2.33)
FinancialGrowth	-0.2825	-0.2626	-0.2713	-0.1569
	(-0.67)	(-0.62)	(-0.64)	(-0.38)
_cons	1.9255**	1.3954	1.8227*	2.2596**
	(2.09)	(1.53)	(1.95)	(2.42)
N	3220	3220	3220	3220
r2_a	0.0756	0.0810	0.0727	0.0790

Hypothesis 2 proposes that BRI poses a more significant positive impact on the CBA performance of private enterprises than that of SOEs. Column (1) of Table 4 reports the results of the analysis, showing that DID is found to be significant and positive (β=0.4962, $p<0.01$), while the coefficient of the cross multiplier SOE*DID is found to be significant and negative (β=-0.4419, $p<0.01$), lending support to Hypothesis 2.

Hypothesis 3 proposes that BRI poses a more significant positive impact on CBA performance of high-technology firms than that of traditional industrial firms. Column (2) of Table 4 reports the results of the analysis, showing that the coefficient of the cross multiplier HT*Post is found to be significant and negative (β=-0.5266, $p<0.01$), HT*Treat is found to be significant and negative (β=-0.7620, $p<0.01$), while HT*DID is found to be significant and positive (β=0.6826, $p<0.01$), lending support to Hypothesis 3.

Hypothesis 4 proposes that BRI poses a more significant positive impact on CBA performance of firms whose TMT has international experience. Column (3) of Table 4 reports the results of the analysis, showing that the coefficient of the cross multiplier OverseaBack*DID is found to be significant and positive (β=0.2996, $p<0.1$), lending support to Hypothesis 4.

Hypothesis 5 proposes that BRI has a more significant and positive impact on CBA performance for companies with digitalization. Column (4) of Table 4 reports the results of the analysis, showing that the coefficient of the cross multiplier Digital*DID is found to be significant and positive (β=0.3344, $p<0.1$), lending support to Hypothesis 5.

Robustness tests

In order to further ensure the rigor of the study and the reliability of the empirical results, a series of robustness tests were conducted, including replacing the proxy variables, removing the sample observations in the year of the policy, removing the sample observations where the host country is a developed country and also a BRI country, and the propensity score matching test.

First, we set different window periods to measure short-term performance of CBA as substitution variables. CAR is measured using the cumulative excess returns during the 5-day and 10-day windows around the first announcement date of the CBA event, respectively, with the estimated window period

ranging from 150 to 30 days before the first announcement date, i.e. [-150, -30]. The results are shown in columns (1) and (2) of Table 4, with the coefficient on DID being significant and positive at the 5% level. Therefore, both short-term and long-term CBA performance in BRI countries has been significantly improved since the implementation of the BRI, and the long-term performance improvement is significantly better than the short-term performance.

Second, taking into account the possible lag in the implementation effect of the policy, we deleted the sample observations in the year of the policy, then re-tested Model 1. The result is reported in column (3) of Table 4, the three main variables remain largely consistent with the baseline regression results in terms of sign and significance.

Third, considering that the sample is only classified according to whether the host country is a country along the BRI, there may be a sample of developed countries along the BRI, which may affect the findings of the study, we deleted the sample observations for countries belonging to both the BRI and developed countries, then re-tested Model 1. The result is reported in column (4) of Table 4, the three main variables remain largely consistent with the baseline regression results in terms of sign and significance. Therefore, the conclusions are consistent with the original findings after excluding the possible confounding effect of the host country being a developed country along the BRI.

Finally, considering the "selectivity bias" caused by differences in firm characteristics, in order to eliminate the bias on the robustness of the findings, we conducted further regression after re-matching the control groups by combining the propensity score matching method and the DID approach (PSM-DID). The propensity scores were calculated for each sample through a logit model, and then the control group was matched with a 1:1 nearest-neighbour with put-back, and the unsuccessful samples were removed and the model was re-analysed using the new samples. The result is reported in column (5) of Table 4, the three main variables remain largely consistent with the baseline regression results in terms of sign and significance.

The above robustness tests consistently demonstrate that the findings of the previous study are robust, and we are confident that our results are generally reliable.

Table 5 Robustness tests

	CAR [-5,5]	CAR [-10,10]	Corporate overseas M&A performance ($BHAR_{12M}$)		
			Delete Policy Current year observations	Removal of observations for developed countries along the Belt and Road	PSM-DID
	(1)	(2)	（3）	（4）	（5）
Post	0.0430	0.0687*	0.5919***	0.4959***	-0.0415
	(1.54)	(1.95)	(3.30)	(2.68)	(-0.39)
Treat	-0.0890**	-0.0842*	-0.1950**	-0.6713***	-0.1819**
	(-2.11)	(-1.76)	(-2.22)	(-4.07)	(-2.56)
DID	0.0958**	0.1082**	0.2133**	0.4722***	0.1802**
	(2.11)	(2.00)	(2.39)	(3.06)	(2.43)
Cash	0.9173***	1.1111***	0.0866	0.7937**	0.8902***
	(5.12)	(5.46)	(0.36)	(2.34)	(2.85)
Size	0.0162*	0.0081	0.0118	0.0287**	0.0411**
	(1.85)	(0.81)	(1.16)	(2.18)	(2.09)
Leverage	0.1582***	0.2008***	-0.4954***	-0.1686	0.0717
	(3.87)	(3.95)	(-3.42)	(-0.98)	(0.86)
ROE	0.0749	0.0982*	-0.4798***	-0.5042***	0.1491
	(1.53)	(1.94)	(-3.00)	(-3.14)	(1.28)
FixedAssets	0.0073	0.0118	-0.0110	-0.3531**	0.1342
	(0.18)	(0.22)	(-0.15)	(-2.13)	(1.20)
Age	0.0035***	0.0041***	0.0033**	-0.0022	0.0045*
	(2.77)	(2.61)	(2.26)	(-0.95)	(1.71)
Tobin'Q	0.0326***	0.0408***	0.0060	0.0475***	0.0791***
	(3.35)	(3.90)	(0.59)	(2.63)	(2.88)
SaleGrowth	0.0085	0.0193	0.0991***	0.2545***	0.0091
	(0.55)	(0.90)	(3.19)	(4.49)	(0.21)
SOE	-0.0505**	-0.0527**	-0.0881***	-0.1430***	-0.0844**
	(-2.51)	(-2.39)	(-3.58)	(-4.25)	(-2.05)
Top1Share	-0.0003	-0.0002	0.0054***	0.0054***	-0.0012
	(-0.70)	(-0.55)	(3.37)	(2.94)	(-1.19)
Separation	0.0032***	0.0041***	0.0085***	0.0027	0.0067***
	(3.27)	(3.62)	(4.27)	(1.06)	(2.75)

MAscale	0.0371	0.0193	-0.1339***	-0.2043***	-0.2894*
	(0.83)	(0.39)	(-3.13)	(-3.56)	(-1.77)
Payment	-0.1894**	-0.2123**	-0.1085	-0.0935	-0.5625
	(-2.20)	(-2.33)	(-1.52)	(-1.27)	(-1.59)
HHI	-0.2125**	-0.1403	0.6016*	0.2528	-0.2299
	(-2.31)	(-1.29)	(1.66)	(0.63)	(-1.56)
GDP	0.0120	0.0133	-0.0474	-0.0602	-0.0253
	(1.46)	(1.32)	(-1.29)	(-1.34)	(-1.01)
EconomicGrowth	0.0126**	0.0090	-0.0532***	-0.0339	0.0066
	(2.24)	(1.53)	(-2.59)	(-1.63)	(0.76)
Population	-0.0105***	-0.0090**	0.0297**	0.0245*	0.0082
	(-2.89)	(-2.20)	(2.09)	(1.67)	(0.63)
Trade	0.0093	0.0130*	0.0794**	0.1213***	0.0164
	(1.62)	(1.77)	(2.57)	(2.75)	(1.52)
FinancialGrowth	-0.0932	-0.1098	-0.6352	-0.7770	0.0837
	(-1.09)	(-1.02)	(-1.42)	(-1.29)	(0.46)
_cons	-0.7084***	-0.5884*	0.9946	0.8825	-0.0808
	(-2.70)	(-1.92)	(1.11)	(0.84)	(-0.15)
Industry effects	Control	Control	Control	Control	Control
Annual effects	Control	Control	Control	Control	Control
N	3220	3220	2884	2984	566
Adj.R^2	0.1251	0.1115	0.0797	0.0758	0.2605

4. DISCUSSION

Contribution

The research on Chinese MNEs' CBA activities is exciting, especially given these MNEs being exposed to relatively unique home country contexts and the national-level strategy design such as BRI. There is a wealth of literature discussing FDI by DMNEs, or EMNEs' acquiring strategic assets in advanced countries. However, literature on CBA by Chinese MNEs in BRI countries which are dominated by

emerging economies is important but still underdeveloped.

Primarily, we contribute to the literature by integrating multiple theoretical lenses to discuss Chinese MNEs' CBA performance under BRI. Chinese MNEs suffer from the 'liability of origin' and face legitimacy challenges during CBA activities. Being exposed to complicated contexts, multiple theories and perspectives would be complementary to offer us a deeper understanding of the phenomenon. Despite the legitimacy perspective drawing increasingly more attention in recent literature, it is still new in exploring CBA performance in BRI countries.

Moreover, in the analysis of how heterogeneity of acquirers can impact CBA performance under the BRI, a prominent contribution is the discussion of high-tech enterprises' CBA performance from the perspective of CBA motivation. Despite an increasing amount of literature that starts to look at EMNEs' FDI, the main motive being discussed is strategic asset seeking based on the LLL paradigm and springboard perspective. Most of the previous studies focused on the high-tech enterprises' CBA in developed countries with the acquisition of advanced technology as the main motivation. Given the threats of increasing resistance of developed countries (Lu & Biglaiser, 2019) and the opportunities brought by the strong support of the BRI, our result provides new insights for high-tech enterprises to implement CBA along the BRI countries with the main motivation of market seeking and efficiency seeking (Dunning, 1998). Another highlight is the in-depth discussion on digitalised enterprises' CBA performance from the perspective of enterprise CBA capabilities. With the rapid development of the digital economy, increasingly more enterprises are undergoing digitalisation, which poses a profound impact on industrial transformation (Li et al., 2018). As an important form of a new round of industrial transformation, the research of digitalisation's impact on CBA is still rare. Our result provides new evidence of the positive impact of digital transformation on CBA performance in BRI countries from the perspective of enterprise CBA capabilities, such as selection ability of the target and control ability after CBA.

Additionally, we innovatively adopt difference-in-difference approach to systematically assess the impact of the BRI. We further use the triple difference model (Olden & Moen, 2022) to accurately identify the heterogeneous characteristics of the impact on CBA performance in BRI countries.

Additional Research Avenues

Aside from what we have discussed, there are some potential future research avenues worth noting. First, we use the quasi-natural experiment of BRI to study the variation in CBA performance of EMNEs in acquiring EMNEs and DMNEs and by emphasising heterogeneity within EMNEs (acquirers). We believe the relational logic we develop here will help to better identify how institutional settings and varying bilateral relations between countries will yield distinct performance (Bhagwat et al.,2021), in particular, the scope, intensity and industrial impact of different bilateral cooperation agreements – emerging economies and emerging (BRI) countries *versus* emerging economies and developing countries – would result in the variation in CBA performance. To provide acuity to EMNEs' CBA research going forward, we believe the legitimacy perspective can provide better nuance in theory as drawn from the contexts in which EMNEs are rooted.

In addition, given that greenfield investments differ from CBA in many ways (Deng & Yang, 2015), future studies may endeavour to explore the influence of emerging economies' institution voids on CBA performance and other aspects of firms' actions, including the selection of acquisition targets, M&As modes, post-merger integration, synergies between the foreign targets and the bidders. The inefficiencies of emerging economies' institutions have been associated with firms' strategies (Uhlenbruck et al.,2006), CSR (Chen et al., 2022) and globalisation of innovation (Bian et al., 2021). We suggest that distinguishing differences between EMNEs and DMNEs merged by EMNEs might open opportunities to deepen our understanding of institutions in IB research.

5. CONCLUSION

This research explores how BRI positively impacts Chinese MNEs' CBA performance, such impacts are particularly salient in private enterprises, high-tech enterprises, firms with TMT's international background, and firms under digitalisation. Overall, we add novelty to BRI literature by integrating multiple theoretical lenses, by suggesting legitimacy perspective as a relevant angle, and by using innovative research design. We hope our research can encourage future research in exploring EMNEs' motivation diversity in CBA.

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Watching the Sun, not only the Clock - How Temporal Boundary Influences MNEs' Entry Mode Choice

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WATCHING THE SUN, NOT ONLY THE CLOCK — HOW TEMPORAL BOUNDARY INFLUENCES MNES' ENTRY MODE CHOICE

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Extended Abstract

This study draws insights from media synchronicity theory (MST) to understand why and how temporal boundary between multinational enterprise (MNE) parent and subsidiary locations may affect MNEs' entry mode choice. Temporal boundary, indicated by local work-time schedule differences between the parent and subsidiary, determines the extent to which synchronicity can be achieved in day-to-day, real-time communication between the two locations. Such communication synchronicity enables MNE parents to excise control and effective knowledge exchange with subsidiaries and alter their entry mode selections. Empirical analyses of a sample of 3,500 subsidiaries of 1,801 Japanese MNEs between 1990 and 2009 support our theorizing.

Keyword: temporal boundary, work-time overlap, entry mode selection

1. Introduction

A critical challenge for multinational enterprises (MNEs) is to coordinate operations dispersed across cross-country boundaries (Hamel & Prahald, 1994; Hymer, 1976). Cross-country boundaries, which serve as distinctive lines that define organizations or organizational subunits (Schotter et al., 2017), manifest in multiple ways, such as spatial, cultural and language boundaries between MNE parents and subsidiaries often impede information flows and communication, and inhibits effective MNEs management (Boeh & Beamish, 2012; Dunning, 1998; Hansen & Lovas, 2004). Advances in information and communication technologies (ICTs) are enabling new ways of communication to overcome boundaries of space and time (Boudreau et al., 1998; Montoya-Weiss et al., 2001). By embracing new technologies, MNEs can go virtual and adopt new cost-efficient business practices, such as virtual teams, to interact remotely and in real time with their globally dispersed foreign subsidiaries (Chen & Kamal, 2016; Slangen, 2011). Surprisingly, research has paid little attention to how such salient changes in communication practices may affect MNEs' entry mode strategies.

Real-time remote communication enables synchronous communication via electronic tools, hereinafter simply referred to as synchronous communication (Dennis et al., 2008). It provides a cost-efficient communication practice (Robbins & Judge, 2007) that closely resembles face-to-face communication (Dennis et al., 2008). Research shows that synchronous communication can process equivocal and complex tasks with substantial non-routine, interdependent activities, such as control and knowledge transfer (Espinosa & Carmel, 2003; Espinosa et al., 2015; Thompson, 1991). This creates a puzzle for MNEs' entry mode strategy: To what extent will MNEs' capacity to engage in synchronous communication affect their entry mode choice in foreign subsidiaries?

Work-time schedule differences between MNE parents and foreign subsidiaries create temporal boundary (Espinosa et al., 2015; O'Leary & Cummings, 2007), leading different capacity for synchronous communication. When the parent-subsidiary temporal boundary is low, MNEs employees in both locations can communicate synchronously during their window of joint daily work-time. When the level of parent-subsidiary temporal boundary is high, the lack of work-time overlap prevents

synchronous communication and only allows for asynchronous communication. The temporal boundary between two firms adds additional complexities to MNEs' operation and deplete managers' energy and time, imposing challenges and constraints on MNEs' strategies.

2. Literature and framework

MNEs' entry mode selection. Among various entry mode choices, the wholly owned subsidiary (WOS) and the joint venture (JV) are the two most important equity-based entry forms compared (Zhao et al., 2004). The choice between WOSs and JVs has been subject to extensive empirical investigations (Morschett et al., 2010). Various factors such as transaction cost related characteristics, international experience of the MNE, and cultural distance between the investing country and the host country have been found to have an impact on the choice. In this paper we introduce another important factor that may determine MNEs' entry mode choices: the temporal boundary between MNEs and their subsidiaries.

Media Synchronicity Theory. We draw on media synchronicity theory (Dennis et al., 2008) to hypothesize a negative relationship between parent-subsidiary temporal boundary and MNEs' use of WOSs. We also examine to what extent the level of industry globalization and investment motivations moderate this relationship. Specifically, we posit that the high level of industry globalization equips MNEs with the experience needed for effective parent-subsidiary synchronous communication, while investment motivations, such as knowledge-seeking and mark-seeking creates an additional demand for parent-subsidiary synchronous communication. As such, we propose that industry globalization weakens the negative relationship between temporal boundary and the likelihood of MNEs use of WOS, while knowledge-seeking and mark-seeking investment motivations strengthens this relationship.

3. Method and results

We test our hypotheses using a sample of Japanese MNEs. Japan has been a leading source country for

outward foreign investment. We compiled data from the Toyo Keizai Japanese Overseas Investment database (Toyo Keizai Inc., 2014). This database has been widely used in many prior studies (Gaur et al., 2007; Yang et al., 2022).

Table 1 Regression on the Likelihood of Using Wholly Owned Entry Mode

Dependent Variable	**Logit**			**Tobit**		
	DV: WOS (dummy)			**DV: Ownership (ratio)**		
Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Overlapping work hours (OWH)	-0.1374***	-0.1141***	-0.1304***	-0.0329***	-0.0249***	-0.0318***
	-0.0208	-0.0215	-0.0216	-0.005	-0.0053	-0.005
Parent & subsidiary variables						
Firm Size (asset)	-0.0672***	-0.0649***	-0.0664***	-0.0173***	-0.0167***	-0.0169***
	-0.0235	-0.0235	-0.0235	-0.006	-0.006	-0.006
The number of Japanese parents	-0.5812***	-0.5743***	-0.5725***	-0.0975***	-0.0957***	-0.0947***
	-0.065	-0.0646	-0.0648	-0.0119	-0.0117	-0.0118
FDI experience on the same host country (FDI_H)	-0.0032***	-0.0032***	-0.0032***	-0.0007***	-0.0007***	-0.0008***
	-0.0004	-0.0004	-0.0006	-0.0001	-0.0001	-0.0002
Distance variables						
Geographic distance	0.1936**	0.3432***	0.3210***	0.0175	0.0692***	0.0609***
	-0.0978	-0.1064	-0.1048	-0.0214	-0.024	-0.0236
Culture distance	-0.0146***	-0.0113***	-0.0105**	-0.0039***	-0.0029***	-0.0026***
	-0.004	-0.0042	-0.0041	-0.0009	-0.001	-0.001
Economic distance	0.0057*	0.0117***	0.0119***	0.001	0.0030***	0.0031***
	-0.0034	-0.0038	-0.0036	-0.0008	-0.0009	-0.0009
Administrative distance	-0.0045***	-0.0039***	-0.0037***	-0.0013***	-0.0011***	-0.0010***
	-0.0012	-0.0012	-0.0012	-0.0003	-0.0003	-0.0003
Interaction variables						
OWH*FDI_H			0.0001***			0.0001***
			0			0
Constant	1.3881	-0.4341	-0.2584	1.4268***	0.8063***	0.8753***
	-1.0453	-1.1595	-1.1551	-0.247	-0.2772	-0.2733
Sigma Constant	/	/	/	0.4617***	0.4609***	0.4601***
				-0.0067	-0.0067	-0.0068
Observations	10539	10539	10539	10539	10539	10539
F	/	/	/	24.5852	25.1301	34.0134
R Square	0.1833	0.1848	0.1858	0.1657	0.1686	0.1709

4. Discussion

Our theorizing and findings make a contribution to the extant literature by introducing a new

theoretical perspective — media synchronicity theory (MST) (Dennis et al., 2008) – to explain MNEs' entry mode strategies. By drawing on this new theoretical lens, we identify parent-subsidiary temporal boundary as a nascent but important antecedent of choice of entry mode that can alter the predictions of the traditional theoretical approaches adopted in the entry mode literature (e.g., Gong, 2003; Tan & Mahoney, 2006). As such, our paper demonstrates that the relative value of different types of entry mode can vary along with parent-subsidiary temporal boundary.

Our paper also responds to recent calls for closer examinations of and theorizing in regard to why and how time matters in international business practices and research (George & Jones, 2000). We extend the literature that primarily uses time-zone distance as an indicator of temporal boundary, by also considering differences in daily work-time regimes, weekends, and national holidays between the parent and subsidiary locations. This helps to tease out time effects from distance effects, which are often confounded, in regard to the effects they have on MNEs' strategic decisions (Beugelsdijk et al., 2010; O'Leary & Commings, 2007).

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Positive Institutional Distance and Global Value Chain Participation of Developing Country Firms: Evidence from the Covid-19 Pandemic Crisis

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Positive Institutional Distance and Global Value Chain Participation of Developing Country Firms: Evidence from the COVID-19 Pandemic Crisis

Abstract

Born with the COVID-19 pandemic is a dramatical shock on the global value chains, which attracts attention of scholars to the connection between pandemic-related factors and institutional distance literatures to probe the boundary conditions of the discovered mechanisms. How does stringency of lockdown policy during COVID-19 in home country and host country heterogeneously moderate the relationship between positive institutional distance and Global Value Chain (GVC) participation of developing countries' companies? This key research question is the focus of our study. We base on the institution-based view and institutional distance – GVC literature to answer this key question. We construct a comprehensive and unique sample of COVID-19 lockdown policy stringency index and GVC-related trade data from 32 developing nations in 2020. Using ordinary least squares estimation with robust standard error, we find that positive institutional distance positively affects the developing country firms' GVC participation, and stringency of lockdown policy during COVID-19 heterogeneously moderates this main effect in host country (U-shape) and home country (linear).

Keywords: global value chain; COVID-19 pandemic; positive institutional distance; developing country

Positive Institutional Distance and Global Value Chain Participation of Developing Country Firms: Evidence from the COVID-19 Pandemic Crisis

Introduction

What determines a firm's engagement in global value chain (GVC) participation? To answer this question, the international business and economic literature has studied the effects of different dyadic relationships between home and host countries on GVC, among which institutional distance has received a lot of attention. Prior studies have found that the impact of institutional distance on GVC participation is multifaceted with both positive and negative effects (e.g., Bergantino & Spiru, 2020; Kano, Tsang & Yeung, 2020; Colombo, d'Adda& Quas, 2019). While the studies of developing country firms argue that higher institutional distance may benefit developing country firms because they could continuously learn from host country with different institutional environment (Cai, Li, & Cao, 2021; Shen, Zhang, Lee & Zhang, 2021; Yang & Driffield 2022). In recent years with the outbreak of COVID-19 pandemic, some nascent studies have started to explore the impacts of COVID-19 on the structural adjustment and resilience of GVC, and empirically find that the vulnerability of GVC results in losses in both developing and developed countries (Inoue & Todo, 2020; Pichler et al., 2020; Bonadio et al., 2020; Hayakawa & Mukunoki, 2021). Indeed, the high-profile pandemic crisis provides further evidence of the importance of institutional environment for firm GVC participation and, in turn, a country's GVC performance. However, although the potential benefits and costs associated with high institutional distance in GVC is emphasized in several studies, little has done to clarify whether and how developing country firms could

benefit from GVC participation in institutionally remoted countries, and the host and home country pandemic-related policies shape these benefits during COVID-19 pandemic crisis.

Drawing on an institution-based view, the benefits and costs of participating institutionally distant countries may vary according to changed environment during pandemic crisis. During the pandemic, many countries have implemented different levels of lockdown policies to amid the threats of COVID-19, and such policies in home and host countries may jointly change the mechanisms that developing country firms could benefit from GVC participation in institutionally remoted countries, and then eventually influence their GVC participation in global market. For instance, high (low) level stringency of lockdown policies may magnify (undermine) the effect of institutional distance on GVC participation due to the variation in domestic economic structure and reliance on partners. Therefore, examining the boundary condition of the stringency of lockdown policies during COVID-19 advances our existing knowledge on whether and how developing country firms could benefit from GVC participation in institutionally remoted countries during uncertainty and crisis (Hilmersson & Jansson, 2012; Schwens, Eiche, & Kabst, 2011).

To fill in this research gap, our study examines the moderating effect of host and home country lockdown policy on the effect of positive institutional distance with directions on developing country firms' GVC participation during COVID-19 crisis. Specifically, based on institution-based view, we argue that positive institutional distance affects the developing home country's GVC participation in the host country, and the moderating effects of stringency of lockdown policy during COVID-19 in the home country and host country will be

heterogeneous. To test these hypotheses, we construct a unique and comprehensive database about the GVC-related trade by country from 32 developing nations in 2020. We achieve integration of institution-based view and emerging pandemic crisis by focusing on the change of effectiveness of highly different institutional environment in facilitating developing firms' GVC participation during COVID-19 lockdown. We thus depart from existing GVC literature, which focusing on the effect of institutional distance during normal period of time without considering such effect in a pandemic crisis (e.g., Kano, Tsang & Yeung, 2020; Colombo, d'Adda& Quas, 2019).

Overall, this study makes four contributions. First, we enrich an institution-based view of GVC participation by providing a fine-grained analysis of the institutional distance-GVC participation relationship across different COVID-19 lock-down environment. Our hypotheses primarily suggest that stringency of lockdown policies in home and host countries during COVID-19 may influence the effectiveness of positive institutional distance in promoting developing firms' GVC participation differently. To our knowledge, this is the first study to focus on the link between dyadic institutional factors and firms' GVC participation surrounding the pandemic crisis. Second, our study contributes to the construction of deepening links between pandemic-related factors and traditional literature streams. Despite the increasing evidence that COVID-19 crisis has brough huge losses to GVC, we find that such a recognized negative event may also promote developing country firms' GVC participation in institutionally remoted countries. Third, while most previous studies examine the implications of institutional distance in GVC, our analysis focuses on the implications of positive

institutional distance for developing country firms. Our focus on positive institutional distance builds on the literature of that argues that directions of institutional distance matter (Hernández, Nieto& Boellis, 2018). Finally, this paper has critical empirical contribution by testing the u-shape moderator, which can provide new ideas to creatively re-design the research models and critically re-think previous research models with non-linear independent variables.

Literature review

Institutional distance and global value chain participation between partners

The strategy and economic literature have paid much attention on how institutional environment affects firms' GVC participation (De Groot, Linders, Rietveld, & Subramanian, 2004; De Mendonça, Lirio, Braga, & Silva, 2014; Linders et al., 2005; Ge, Dollar & Yu, 2020). The institution is the rules of games (North, 1990; Hwang and Powell, 2005; Peng, 2003), which explains the popular methods of doing things in certain contexts (Nelson, 2008). The institution consists of the formal institution and the informal institution, while the formal institution is laws, formal regulations, and provisions, the informal institution refers to social norms and culture-related factors (Peng, 2003; Holmes, Miller, M. A., & Salmador, 2013). Institutions structure a comprehensive environment of economic, political, cultural, and social relationships, which in turn determine transaction costs for firms embedded within (Chao et al., 2010) and impact on firm's cooperation among partners.

The multi-dimensional difference of institutional environment between home country and host country is institutional distance (Xu & Shenkar, 2002; Eden & Miller, 2004). It is one of the important sources of comparative advantage (Nunn & Trefler, 2014), which significantly

affects the cooperative decision-making of diversified parties involved in global value chains (Ge, Dollar & Yu, 2020) and receives concerns from GVC scholars. As Sturgeon (2008) suggests: *"The word 'global' in global value chains simply signals our interest in value chains that include an element of vast distance."* Taking it as an independent variable, based on institutional theory, scholars regard firm's cross-border activities as the reaction of participating companies to the confronting institutional distance between the host country and the home country (Lee & Kim, 2014; James et al. 2020). There is substantial literature on the effect of institutional distance on MNEs' international strategic decisions (eg. Vermeulen & Barkema, 2002; de Mendonça, Lirio, Braga, & Silva, 2014). Recent strategy literature further differentiates institutional distance into two types: positive and negative ones (eg. Deng, Jean & Sinkovics, 2018; Konara, & Shirodkar, 2018).

GVC literature finds negative effect of negative institutional distance by taking perspective of developed country as home country and suggest that similar institutional environment and quality level leads to the homogeneity in business procedures, which decrease the searching and matching costs between partners in GVC (de Groot et al., 2004; de Mendonça, Lirio, Braga, & Silva, 2014; Linders et al., 2005; Liu et al. 2022). High institutional distance shows insecurity and uncertainty in the partnership. The difference in institutions brings obstacles to communication, which leads to unknowable and unpredictable rules, increasing uncertainty and high transaction costs for firms (Gooderham et al., 1999; Pogrebnyakov & Maitland, 2011). The unpredictability and unfamiliarity of regulatory and policies between home country and host country lead to the insecurity related to heterogeneity (de Groot et al., 2004) and impose

an increased price on GVC goods, because legal cost can be unexpected high (Slangen & van Tulder 2009; Raff, Ryan, & Stähler 2009; Arslan & Larimo, 2017). These previous studies focus on the negative effect of negative institutional distance, while we know little about how positive institutional distance affect GVC.

Taking developing country as home country, we concern how positive institutional distance may affect GVC participation. Positive institutional distance refers to the better institutional environment in host country compare to the home country. For developing country firms, a more developed host market with certainty and transparency may help them gain competitive advantages as a springboard, which helps the companies escape from the institutional voids of home countries by reducing transaction costs (Acemoglu & Johnson, 2005; Williamson, 1991; Shenkar, Luo, & Yeheskel, 2008; James et al. 2020).

COVID-19 and global value chain

Born with the COVID-19 pandemic is a sharply increased academic focus on how the pandemic would affect the global value chains. To address this question, recent studies have found that the impact of the COVID-19 pandemic on international trade and global value chains is mainly concentrated in two aspects: the direct impact of the COVID-19 pandemic (Hayakawa and Mukunoki, 2021; Bekkers and Koopman, 2021; Vidya and Prabheesh, 2020) and the following impact of trade policies (Pauwelyn, 2020; Evenett, Fiorini, Fritz, Hoekman, Lukaszuk, Rocha, & Shingal, 2022). In the short term of the outbreak, countries' GVC participation is expected to decline, while in the long term, as companies adjust their activities integrating in globalization, companies' operation will remain in the usual level after

restructuring (Gruszczynski, 2020), because the shocks are mainly concentrated in the early stages of the COVID-19 outbreak (Hayakawa and Mukunoki, 2021; Bekkers and Koopman, 2021; Vidya and Prabheesh, 2020). The major shocks of the pandemic to GVCs are the number of cases in supply countries that prevent people from production, and the damage to the demand for manufactured goods in various countries (Baldwin and Freeman, 2020). This causes different industries and countries to be affected differently (Hayakawa and Mukunoki, 2021), for example, downstream countries and industries are more affected by China's production disruption than upstream countries and industries (Meng, Q., Xiuyan, L., & Xiaoxue, Z., 2020). On the other hand, the impact comes from policy that focuses on trade protectionism, especially export barriers created to ensure the supply of goods that meet domestic demand first (Pauwelyn, 2020; Evenett et al. 2022). The shock and uncertainty between countries brought about by the pandemic may prompt companies, especially multinational corporations, to redesign their global value chains (Javorcik, 2020).

The alignment of institutional environment and pandemic environment requires a comprehensive consideration of both sides. The COVID-19 pandemic forces governments to make quick-response decisions amid threats, uncertainty and time pressure (Boin, McConnell & Hart, 2021), which can differ from home countries and host countries. The lockdown stringency may impact on institutional distance effects by setting new boundary conditions that should not be ignored in current uncertain period. High (low) level stringency may magnify (undermine) the institutional distance effect through the variation in domestic economic structure and reliance on partners.

Therefore, how the stringency of lockdown policy during COVID-19 advances existing knowledge on the boundary conditions of institutional distance effects on GVC during COVID-19 is the key research question we are interested in. We hope to introduce a comprehensive perspective to enrich our understanding of the GVC participation during such an uncertain period.

Hypotheses

Positive institutional distance and developing country companies' GVC participation

Positive institutional distance may enhance the linkage between companies from the host country and the home country. Establishing and maintaining inter-organizational linkages help achieve business goals that may be difficult for a single company to achieve (Jao-HongCheng, 2011; Giroud & Scott-Kennel, 2009), which constitutes the production process of the global value chain. Developed formal institutions such as strong legal systems in the host country may prevent the prevalence of biliteral partner companies' opportunism (Parkhe, 1993; Poppo & Zenger, 2002), which protects the trustiness in GVC cooperation and reduce the risks. Companies in developing markets may lack or cannot afford the ability to effectively utilize and protect intellectual property (Peter Hanel, 2006), it undermines the foundations of GVC cooperation between cross-border partners. The developed institutions of the host country bring better protection of intellectual property, it reduces the barriers to the technology transfer caused by weak intellectual property protection in developing home countries (Peter Hanel, 2006) and increase the efficiency of the cooperation. If the institutional environment lacks legal

support for the enforcement of contracts and property rights, it is difficult for companies to properly combine formal contract control with potential harm (Zhou & Poppo, 2010). To sum up, a host country with better institutions means constraints on opportunism, regulation of contract enforcement, and protection of intellectual property, which facilitates the establishment of linkages between host country companies and participating partners in the global value chain.

Positive institutional distance may bring the information symmetry advantages for companies from the home country with underdeveloped institutions. The previous literatures treat the environment as a source of information, which leads to the problem of uncertainty in external conditions (Aldrich 1979). Institutional frameworks that promote information transparency and reduce information asymmetry help GVC members to control risk (D Anginer et al., 2018). Partner firms in the GVC shares information about time and distance constraints, as well as potential risks and benefits (Cheng, 2011). Therefore, information symmetry affects the participants cost and competitive advantage (Huang et al., 2003, Tan, 1999; Li and Lin, 2006; Shin et al., 2007). A developed host country institutional environment implies an increase in the quantity and efficiency of information flows (Pinar & Volkan, 2018). The high-quality and large-scale information flow brings information symmetry among GVC participants and the external environment, which is conducive to the cooperation efficiency and the strategic coordination between companies. Information symmetry strengthens the linkages between members of the GVC and alleviates the conflict caused by information asymmetry (Cheng, 2011). Firms operating in an environment with information symmetry and

fairness lead to less likelihood of contract defaults and/or renegotiations, thereby saving ex-post transaction costs (Luo 2002; Mooi and Ghosh 2010; Z Yang, C Su, KS Fam, 2012). On the contrast, the information asymmetry caused by the underdeveloped institutional environment may result in higher operating costs and losses for enterprises. In summary, positive institutional distance may increase information symmetry and facilitates the GVC participation of home country.

Positive institutional distance may bring the transparency and security for companies from the home country with underdeveloped institutions. GVC participation in a host country with a developed system can be a legitimate channel for companies to escape the institutional void of the home country (Bae and Salomon, 2010; Hernández and Nieto, 2015; Zaheer, 1995; Boisot and Meyer, 2008; Cuervo-Cazurra and Ramamurti, 2015; Zheng et al. 2016), because the formal rules of the host country are observable and understandable. This means certainty of returns and predictability of risks and costs. A developed institutional environment creates knowability for transactions and a reliable and predictable political/legal system for property rights protection. This helps companies reduce planning costs and the cost of dealing with uncertainty. Therefore, countries with clearer rules, secure and transparent institutions are more attractive to partners from developing home countries. The increased positive institutional distance between the home country and the host country will facilitate companies in the home country to choose these countries as participating destinations for GVCs.

These advantages are important for companies from the developing country with underdeveloped institutions. Given the distribution of the global value chain is that most

developing countries undertake labor-intensive and low-value-added segments of the GVC, they are in low bargaining power and incentive competence (Foster-McGregor, Kaulich, and Stehrer 2015; Abreha et al. 2020; Ndubuisi & Owusu, 2022). Home-country companies tend to find partners in host countries to gain their position in the global value chain in order to integrate into globalization. Technical exchanges and cooperation with partners form host country with developed institutions help developing country partners build higher production standards, and well-trained workers to meet the requirement of developed institutions and customer needs (Grewal & Dharwadkar, 2002). These ensure that the current low-value-added position of developing country companies would not be replaced and help them become large suppliers in the GVC. Essentially, it is shifting bargaining power from lead firms to large suppliers in developing economies in GVCs (Gereffi, 2013).

To conclude, linkages, information symmetry and security are favorable conditions for host countries with developed institutions, which is conducive to the formation of GVC partnership between companies in the home country and partner companies in the host country. Given that developing country's partners with motivation to seek for cooperation, we make the following hypothesis:

Hypothesis 1: positive institutional distance positively affects the developing home country firms' GVC participation in their host countries.

Moderating effects of stringency of lockdown policy during COVID-19 in host countries and home countries

The COVID-19 crisis has made it clear that such unpredictable and uncertain volatile issues continue to disrupt our societies and challenge the institutions (Ansell, C., Sørensen, E. , & Torfing, J., 2021). All adverse consequences related to the pandemic, such as the extent of the stringency of lockdown policy, will affect international trade and global value chains on both supply and demand sides. Reduced labor and productivity in supplying countries lowers the supply of export products, while falling incomes and lockdown in host countries reduces demand for both final products and domestic value-added activities for intermediate products (Hayakawa & Mukunoki, 2021).

From low level to intermediate level of stringency of lockdown policy during COVID-19 in host countries, with the increase of stringency, insecurity, unpredictability, and instability emerges will increase the transaction costs for investors from the home country and harms the positive effect of positive institutional distance. In essential, the COVID-19 lockdown is considered as the politics of crisis, which forces governments to make quick-response decisions within threats, uncertainty and time pressure (Boin, McConnell & Hart, 2021). Decisions to close businesses activities and transportation system are subject to considerable uncertainty, depending on how the virus spreads. The continuously growing stringency indirectly increases government intervention in society through restrictive measures and economic stimulus (Lipscy, 2020). The economic and institutional environment will be more volatile and uncertain when home country institutions are more distinct from those in host countries (MA Hitt, RM

Holmes Jr, JL Arregle, 2021). Because the stringency transformed many strategic decisions at partner companies from risk-related to uncertain-related, which means that managers have less knowledge and understanding of future outcomes (Langlois & Cosgel, 1993). This increasing unknowability and uncertainty about the future greatly arises transaction costs and potential legal costs for businesses, which shows negatively effects on the home country's participation in the host country's GVC and reduces the advantages brought about by positive institutional distance.

A very high level of stringency of lockdown policy during COVID-19 in the host countries may reduce the importance of domestic inputs mechanically increases the importance of foreign inputs (Bonadio, Huo, Levchenko & Pandalai-Nayar, 2021). Domestic inputs and foreign inputs construct the total economic structure. The continually increased stringency of lockdown policy during COVID-19 limits Domestic labor and production. Host countries may experience lower incomes for workers due to reduced working hours or unemployment caused by stringency of lockdown policy during COVID-19, which directly reduces the country's demand for final products. Lockdown policy also limits labor participation by restricting the movement of people, which results in a decrease in the amount of domestic value-added activities in intermediate goods and an increase in the cost of participation. Companies that source raw materials or semi-finished products from global suppliers have exposed huge vulnerabilities. For example, Bekaert, Engstrom, and Ermolov (2020) calculate that aggregate demand shocks were largely responsible for the decline in U.S. real GDP growth in the first quarter of 2020. These all lead to higher reliance on manufacturing in developing country firms'

GVC participation, such as China (Golgeci, Yildiz, & Andersson, 2020). The increasing reliance on partners provides an easier way for developing country MNEs to cooperate at a higher level with local partners. This accelerates the establishment of better production standards and well-trained workers and enhances the active motivation of developing country MNEs. In the end, the continually increasing stringency of lockdown policy during COVID-19 helps build a more insensitive linkage among partners.

On the other hand, the high level of stringency of lockdown policy during COVID-19 promotes the information flows in host country with better institutions, leading to a higher level of information symmetry. This enhances the beneficial objective conditions in host countries. The COVID-19 pandemic is an extraordinary news stream that dominate news around the world over time. As the level of lockdown increases, the flooded information of the COVID-19 pandemic, which makes information about COVID-19 spread like the pandemic itself, with a surge in diversified channels (Naseem et al. 2021). To deal with uncertainty, people may seek more information to become better informed, connected, and even protected from the disaster (Allen, 2011; Wilson, 1999; Yang & Hsieh, 2013) through diversified channels such as emerging online technologies (Roy et al., 2020). In host countries with better institutions, transaction-dependent information may be obtained through formal, rules-based channels (Luo, 2007), such as the formal communications through written communication contained in formal memoranda and departmental directives (Johnson, Donohue, Atkin & Johnson, 1994). As the lockdown deepened, diverse information channels provided the flow of information. The increased flow of information through formal, rule-based channels facilitates information

acquisition and reduces information asymmetry between the government and individuals and between organizations (Chen, Peng, Rieger & Wang, 2021). Given the identifying of the risk of the host country's lockdown shock and the potential demand, it is helpful for partner companies participates in the host country by responding in advance and reducing the transaction costs. Therefore, in a host country with better institutional environment, the increase of the stringency may lead to the increase of information flow with formal channels. This strengthens the advantages brought by information symmetry, which is conducive to the participation of developing country companies in the GVC of the host country.

To sum up, the increasing stringency of lockdown policy during COVID-19 from low level to intermediate level in host countries increases the insecurity, unpredictability, and instability. But when it comes to a very high level, the disadvantage will be overweighed by the enhancement of the linkage and increased information symmetry. We would make the following hypothesis:

Hypothesis 2: host country's stringency of lockdown policies during COVID-19 moderates the relationship between positive institutional distance and developing country firms' GVC participation, the moderating effect has a u-shape, and the relationship is weakest for an intermediate level of the lockdown stringency.

The continually growing stringency in home country may damage the linkages between home country companies and partners in the host countries. The stringency reduces the supply

of intermediate and final goods in global value chains by restricting people's movements and labor participation. This leads to the increased production costs, the reduced productivity and in the end the increased prices of products, which reduces the competitiveness in GVC (Blaum, Lelarge & Peters, 2018) and harms the linkages between partners from host country. Most developing countries are in labor-intensive and low-value-added segments of the GVC, they are in low bargaining power and incentive competence (Foster-McGregor et al., 2015; Abreha et al. 2020; Ndubuisi & Owusu, 2022). The increased costs and price damage their bargaining power in GVC and decrease their GVC participation in host countries.

The increasing stringency of developing home country decreases the information symmetry. This is mainly because the source of information is hindered by the stringency. To maintain the partnership, and coordination the activities of both parties, partner companies may take frequent initiatives to coordinate and simplify various activities by exchanging the necessary information (Kulp et al., 2004; Monczka et al., 1998; Mohr et al., 1996; Mohr & Nevin, 1990; Mohr & Spekman, 1994; Cai, Jun, & Yang, 2010). In developing countries, underdeveloped formal institutions such as weak legal enforcement make the high risk of contract breaches between partners, which can lead to high litigation costs (Rao, Pearce & Xin, 2005). Firms therefore tend to exchange information with partners through informal relationship-based channels (Lovett et al. 1999; Peng, 2003; Rao et al., 2005; Cai et al., 2010). Information on changing regulations from government officials, and information on new products or technologies from other company managers are important information sources for developing country companies, and frequent face-to-face interactions facilitate these exchange

processes between companies (Kulp et al., 2004 ; Monczka et al., 1998) and implements information symmetry (Luk et al. 2008; Cai et al., 2010). Specifically, information and advice from government officials can provide companies with valuable guidance to navigate uncertainty in a changing environment (Luk et al., 2008); information with timeliness, abundance and minimal deviation shared by partner companies has informational advantages, which increases their ability of survival and development (Luo, 2007). The increase in the stringency of lockdown policy during COVID-19 will restrict the flow of people, which is not conducive to frequent face-to-face interactions and informal channels of information exchange, thus bringing about information asymmetry between companies and governments, and between companies.

The increasing stringency of home country increases the insecurity and unpredictability. Developing home country with low institutional environment makes investors face high uncertainty and unpredictability in production and transportation (Luo, 2002; Zhu, Wittmann, & Peng, 2012). These institutional voids increase the transaction costs of home countries and become the constrains of GVC. The COVID-19 lockdown is the politics of crisis, it forces governments to make quick-response decisions amid threats, uncertainty and time pressure. Developing countries with underdeveloped institutions suffers from low efficiency and lack of transparency during such sudden crisis, which leads to inconsistency and unpredictable policies about the future. On the other hand, for partner companies from host countries, high stringency sets barriers for the cross-board traffic and transportation, such as repeated cancellation of the original itinerary or transportation issues of intermediate products and raw materials. To

conclude, the increasing stringency of home country exacerbates the insecurity and unpredictability in various dimensions and damages the developing country companies' participation in GVC.

Therefore, given that the stringency of home country may harm the linkages of home country in GVC participation, the information symmetry and the security and predictability, the stringency damages the positive effect of positive institutional distance linearly, and we make the following hypothesis:

Hypothesis 3: home country's stringency of lockdown policies during COVID-19 negatively moderates the relationship between positive institutional distance and developing country firms' GVC participation, such that the relationship is weaker for a home country in high stringency of lockdown policy during COVID-19 than a home country in low lockdown stringency.

Method

Sample and data sources

Our sample includes GVC-related trade data from 32 developing nations in 2020 that are collected from the World Integrated Trade Solution (WITS). Each country's data includes the share of its exports in each of its trading partners' imports. The trading partners of each sample include both developing and developed economies. As developed economies, Taiwan and Hong Kong have also been added to the list of trading partners. A few trade partners are

classified as Rest of the World (RoW) by WITS due to their very small volume of trade. Hence, 742 observations between developing countries and their trading partners were employed in our study. Regarding to COVID -19 data, we employed the stringency index and total confirmed cases data from Oxford COVID-19 Government Response Tracker and Johns Hopkins University to measure the epidemic situation faced by each country. For institutional data, we collected 42 countries' data from World Governance Index (WGI) which contained six governance indicators—including voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and corruption control. Moreover, we obtained the other economic data such as GDP per capita, GDP growth and exchange rate from The World Bank open database, and used Millennium Development Indicators of United Nations Statistics Division to distinguish developing countries and developed countries.

Given the goals of this study, the developing countries context is appropriate for several reasons. First, developing countries benefit greatly from resilient global value chains. In the past a few decades, an increasing number of developing countries being favorable investment destinations have made enormous contributions toward the GVC- associated capital flow, and this also enables them to participate, albeit often in relatively low-value adding position, in the global value chain and thus benefiting from learning greatly (Li, Cai et al. 2021). Second, as developing countries continue to strive for a higher output year after year, integrating with the GVCs becomes a key trade policy instrument for them and their participation in the GVCs promotes global economic competition (Shepherd, 2013). Third, with developing countries

accounting for significant large amount of the global population, the prevalence of a global pandemic has dramatic implications for their industrial division of labor and trade collaboration, given an increasing important role played by developing countries in GVCs, COVID-19 will inevitably lead to changes in developing country firms' GVC participation.

Variables and model specification

Dependent variable. Several previous studies have used GVC-related trade indicator as an accounting method to measure a country's relative importance in a global value chain (Li, Meng et al. 2019). We employed this indicator, calculating by the value of trade or output crossing more than one border as share of total trade/output to assess the home country firm's **GVC participation**. The higher the GVC-related trade, the higher the share of the home country firm exports to the host country in the host country's imports. World Integrated Trade Solution reported total GVC Trade output split by sector for each country by integrating data from The World Development Report 2020, and we collected the GVC-related trade data from the website's GVC Trade by Partner module.

Independent variables. **Positive institutional distance:** We referred the approach of Konara & Shirodkar, (2018) calculating positive institutional distance by comparing the values of the World Governance Index (WGI) in the home and host countries. We used the following equation to calculate the positive institutional distance (dWGI) between the bilateral nation pairs in our sample:

$$dWGI_{ij} = \sum_{k=1}^{6}(X_{ki} - X_{kj})$$

The dWGI only captures the institutional distance in the positive direction (when $dWGI_{ij} < 0$). Where X_{ki} represents the value of governance indicator k for country i and X_{kj} represents the value of governance indicator k for country j.

Stringency of lockdown policy during COVID-19: The lockdown stringency index, produced by OxCGRT (2022), records the strictness of 'lockdown style' policies that primarily restrict people's behavior. It is calculated using all ordinal containment and closure policy indicators—including record closings of schools and universities, closings of workplaces, cancelling public events, limits on gatherings, closing of public transport, stay at home requirements, restrictions on internal movement and restrictions on international travel, plus an indicator recording public information campaigns. Acemoglu et al., (2020) used this index to access the country-specific stringency of the lockdown measures when measuring the economic impact of the epidemic. Similarly, we used this index to assess the stringency of each country's lockdown policy in the COVID-19 pandemic during 2020. The higher the index, the more severe the country's lockdown policy.

Control variables. The economic distance (*Economic distance*) between countries reflects their differences regarding factor costs such as labor wage rate and technological capabilities, affecting the costs of transportation and communications in global trade (Ghemawat 2001). Following by Angela Stefania Bergantino (2020), our economic distance ($dECO$) is measured as Euclidean distance of the GDP per capita in constant US-$ of the country pairs:

$$dECO_{ij} = \sqrt{(GDP_i - GDP_j)^2}$$

Second, geographic distance (*geographic distance*) is mostly described by the spatial distance between two locations and the ease of accessibility, as land or water connections. A direct implication of increasing geographic distance is an increase of transportation costs (Daniels and von der Ruhr 2014). Based on the coordinates of the capital cities, our distance measure is calculated using the great circle formula (Mayer and Zignago 2011).

Third, several studies employed the E-Government Development Index (*E-Government Development Index*) from UN E-Government Knowledgebase to access the quality and efficiency of government management (Fang 2002, Liou 2007, Tseng, Yen et al. 2008). It is a composite measure of three important dimensions of e-government, namely: provision of online services, telecommunication connectivity and human capacity (2022). This index is also significant in the context of COVID-19 because it may reflect how a country is using information technologies to promote access and inclusion of its people under the pandemic.

Fourth, we followed Kersan-Škabić (2019)'s study in GVCs, using annual percentage growth rate of GDP (*GDP growth*) at market prices based on constant local currency as control variable. Aggregates are based on constant 2015 prices, expressed in U.S. dollars. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources.

Fifth, previous studies have found a close link between exchange rate (*Exchange rate*) and GVC participation (Ahmed, Appendino et al. 2017, Georgiadis, Gräb et al. 2020). The rate

is determined by national authorities or to the rate determined in the legally sanctioned exchange market. It is calculated as an annual average based on monthly averages.

Sixth, Kowalski (2015) found the total population (*population*) has significant impact on backward participation. It is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship. The values shown are midyear estimates.

Seventh, Ansah (2020) employed confirmed cases as a factor to assess the economic impact of the pandemic. We obtained the cases data (*total confirmed cases per million*) in 64 countries up to May 2022(2022) and calculated the total confirmed cases per million in each country.

Statistical Methods

Since there were no categorical independent variables and dependent variables, we analyzed nonlinear interactions using OLS regression based on the procedure outlined by Jaccard (2003) to test the effect. To detect possible heteroscedasticity, we used a White test to test it, the result suggests a violation of homoskedasticity, implying that heteroscedasticity issues exist in our model ($p < 0.001$). To reduce the potential effect of heteroscedasticity issues, we used White's robust standard error in estimations (White 1980).

Results

In Table 1, we report the descriptive results including means, standard deviations and correlations between the variables. E-Government index and positive institutional distance are highly correlated (correlation > 0.5), and exchange rate (host country) and stringency of lockdown policy during COVID-19 (host country) are highly correlated (correlation > 0.5) as

well. Because exchange rate and E-Government Index are control variables, the correlations between them should not affect our key conclusions. Furthermore, we used variance inflation factors (VIFs) to assess whether our regression estimates are impacted by multicollinearity. The mean value of the VIFs for our models was 1.66 and the range was 1.09–3.18, well below the proposed critical value of 10. Hence, we do not believe that our estimates will be impacted by multicollinearity.

Variables		Mean	Std. Dev.	1	2	3	4	5	6	7	8	9	10	11	12
1	GVC related trade	0.016	0.051	1											
2	Institutional distance	-0.367	6.906	-0.052***	1										
3	Economic distance	25456.44	21880.45	-0.018***	-0.037***	1									
4	Geographical distance	5826.952	4174.1	-0.158***	-0.144***	0.048***	1								
5	lockdown stringency (host country)	65.493	14.323	0.00200	0.064***	-0.047***	-0.180***	1							
6	lockdown stringency (home country)	65.742	12.097	0.079***	-0.151***	-0.0120	0.0240	-0.0160	1						
7	E-Government Index (home country)	0.709	0.166	0.00300	0.576***	0.074***	-0.218***	0.195***	-0.0140	1					
8	E-Government Index (host country)	0.75	0.147	0.139***	-0.523***	0.122***	0.036***	-0.00400	0.334***	0.064***	1				
9	GDP growth (home country)	2.156	4.474	0	-0.111***	0.023***	-0.00100	-0.076***	0.00700	-0.324***	-0.123***	1			
10	GDP growth (host country)	1.798	3.453	-0.047***	0.063***	-0.023***	-0.061***	0.00200	-0.143***	-0.143***	-0.365***	0.548***	1		
11	Exchange rate (home country)	949.25	3682.186	0.00900	-0.215***	0.00100	0.150***	-0.172***	0.00900	-0.318***	0.00800	0.244***	-0.00200	1	
12	Exchange rate (host country)	511.488	2219.466	-0.061***	0.224***	-0.0230	0.0250	0.00200	-0.508***	0.00500	-0.598***	-0.00300	0.312***	-0.0100	1

13	Population (home country)	6.99e+07	1.85e+08	-0.00200	-0.167***	0.00400	0.095***	0.056***	0.0260	-0.181***	0.00900	0.059***	-0.0120	0.064***	-0.00400
14	Population (host country)	8.34e+07	8.34e+07	0.118***	0.180***	-0.00800	0.076***	0.00400	0.046***	0.00400	-0.279***	0.00300	0.090***	0.00500	-0.052***
15	Total cases per million (home country)	21075.14	2.25e+08	-0.00200	0.288***	-0.0100	-0.293***	0.328***	-0.00600	0.505***	0.00600	-0.095***	-0.00200	-0.278***	0.00100
16	Total cases per million (host country)	27003.560	20988.560	0.110***	-0.220***	0.171***	-0.139***	-0.00600	0.332***	-0.0110	0.272***	0.0120	-0.097***	0.0180	-0.252***

Table 1: Descriptive statistics and matrix of correlation

The regression results are shown in Table 2. Model 1 included control variables only, and Model 2 added the main effects of positive institutional distance to test Hypothesis 1. Model 3 and Model 4 additionally included linear and squared interaction term to test Hypothesis 2. Model 5 introduced another linear interaction term to test Hypothesis 3. Model 6 included all the variables and is only for referenced due to multicollinearity. All the models received significant F value ($p < 0.001$), and the R-squared increased progressively with the addition of variables, indicating that our model setup is reasonable and well performed.

Table 2: Results of regression estimations

VARIABLES	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	-0.157***	-0.142***	-0.123**	-0.029	-0.114**	-0.004
	(-2.81)	(-2.61)	(-2.23)	(-0.41)	(-2.23)	(-0.05)
Economic distance	0.000	0.000***	0.000***	0.000***	0.000***	0.000***
	(0.98)	(4.18)	(4.19)	(3.74)	(4.17)	(3.74)
Geographical distance	-0.000*	-0.000*	-0.000*	-0.000†	-0.000**	-0.000*
	(-1.90)	(-2.17)	(-2.18)	(-2.19)	(-2.30)	(-2.31)
lockdown stringency (host country)	0.000	-0.000	-0.000	-0.004	0.000	-0.003
	(0.20)	(-0.04)	(-0.27)	(-1.39)	(0.11)	(-1.28)
lockdown stringency (host country) squared	-0.000	0.000	0.000	0.000	-0.000	0.000
	(-0.12)	(0.09)	(0.14)	(1.40)	(-0.07)	(1.29)
lockdown stringency (home country)	-0.000	-0.000†	-0.000*	-0.000†	-0.001***	-0.001***
	(-1.06)	(-1.66)	(-1.68)	(-1.66)	(-2.80)	(-2.79)
E-Government Index (home country)	0.009	-0.002	-0.001	-0.001	-0.012	-0.012
	(0.58)	(-0.12)	(-0.09)	(-0.09)	(-0.78)	(-0.74)
E-Government Index (host country)	0.175***	0.207***	0.209***	0.219***	0.210***	0.221***
	(4.10)	(4.50)	(4.48)	(4.36)	(4.54)	(4.40)
GDP growth (home country)	-0.000	0.000	0.000	0.000	-0.000	-0.000
	(-0.15)	(0.65)	(0.62)	(0.59)	(-0.04)	(-0.08)

GDP growth (host country)	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***
	(-3.10)	(-3.36)	(-3.26)	(-3.41)	(-3.45)	(-3.50)
Exchange rate (home country)	0.000	0.000	0.000	0.000	0.000	0.000
	(1.00)	(0.44)	(0.45)	(0.48)	(1.03)	(1.06)
Exchange rate (host country)	0.000***	0.000***	0.000***	0.000†	0.000***	0.000*
	(3.72)	(3.40)	(3.06)	(2.33)	(3.47)	(2.48)
Population (home country)	-0.000	0.000	0.000	0.000	-0.000	-0.000
	(-0.33)	(0.04)	(0.13)	(0.06)	(-0.71)	(-0.69)
Population (host country)	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
	(3.74)	(3.69)	(3.69)	(3.69)	(3.70)	(3.70)
Total cases per million (home country)	-0.000	-0.000*	-0.000†	-0.000†	-0.000	-0.000
	(-1.19)	(-1.75)	(-1.77)	(-1.78)	(-0.71)	(-0.76)
Total cases per million (host country)	0.000†	0.000	0.000	0.000	0.000*	0.000
	(1.87)	(1.59)	(1.49)	(1.46)	(1.71)	(1.60)
Positive institutional distance		0.002***	0.005*	0.025*	0.007**	0.029**
		(3.72)	(2.20)	(2.04)	(3.38)	(2.25)
Positive institutional distance × COVID stringency (host country)			-0.000	-0.001†		-0.001†
			(-1.36)	(-1.85)		(-1.81)
Positive institutional distance × COVID stringency (host country) squared				0.000†		0.000†
				(1.82)		(1.79)
Positive institutional distance × COVID stringency (home country)					-0.000**	-0.000***
					(-2.68)	(-2.66)
Observations	742	742	742	742	742	742
R-squared	0.138	0.157	0.158	0.160	0.167	0.171

Robust t-statistics in parentheses

†p ≤ 0.10; *p ≤ 0.05; **p ≤ 0.01; ***p ≤ 0.005.

In hypothesis 1, we assumed that positive institutional distance positively affects the developing home country firm's GVC participation in the host country. The result of Model 2 shows that coefficient of positive institutional distance is positive and significant ($b=0.002$, $p<0.01$), which supported hypotheses 1.

In hypothesis 2, we predicted that host country's stringency of lockdown policies during COVID-19 moderates the relationship between positive institutional distance and developing country firms' GVC participation, the moderating effect has a u-shape, and the relationship is weakest for an intermediate level of the lockdown stringency. In Model 4, the insignificant coefficients of linear-by-linear interaction (institutional distance × lockdown stringency (host country)) and significant coefficient ($b=0.000$, $p<0.1$) of the squared moderator product term (institutional distance × lockdown stringency (host country) squared) would indicate the presence of quadratic moderation, suggesting that the relationship between the independent variable and the outcome variable as a nonlinear function of the moderator. More specifically, the positive coefficient suggests a u-shaped pattern whereas a positive coefficient indicates a u-shaped pattern, which would partially support hypotheses 2.

In hypothesis 3, we predicted that home country's stringency of lockdown policies during COVID-19 negatively moderates the relationship between positive institutional distance and developing country firms' GVC participation, such that the relationship is weaker for a home country in high stringency of lockdown policy during COVID-19 than a home country in low lockdown stringency. The result of Model 5 shows that the coefficient of interaction term (Institutional distance × lockdown stringency (home

country)) is negative and significant (b=-0.000, p<0.01). Hence, Hypothesis 3 received support.

In order to illustrate how the moderator affects the dependent variable more clearly and to bolster the empirical support for the above conclusions, we plotted the relationship between the moderating and dependent variables. Figure 1 presents the nature of the quadratic interaction, the vertical axes of the graphs represent values of regression coefficients for GVC related trade, and the horizontal axes represent values of stringency between standard deviations below and above the mean (i.e., between 14.5 and 89.9). For host countries that experience a low or a high level of stringency of lockdown policies during COVID-19, the coefficient for the regression of positive institutional distance on GVC related trade is comparatively high and, at an intermediate level of stringency of lockdown policies during COVID-19, the relationship is weakest. Similarly, figure 2 presents the nature of the linear interaction. The vertical axes of the graphs represent values of GVC related trade under different levels of stringency of lockdown policies during COVID-19, and the horizontal axes represent values of positive institutional distance. The relationship between positive institutional distance and GVC related trade was stronger when the level of home country's stringency of lockdown policies during COVID-19 was in low level and, when the stringency of lockdown policies during COVID-19 gradually increased, the relationship became weaker.

Figure 1: The relationship between country's GVC related trade and institutional distance as a function of host country's stringency of lockdown policies during COVID-19 (with 95% confidence interval)

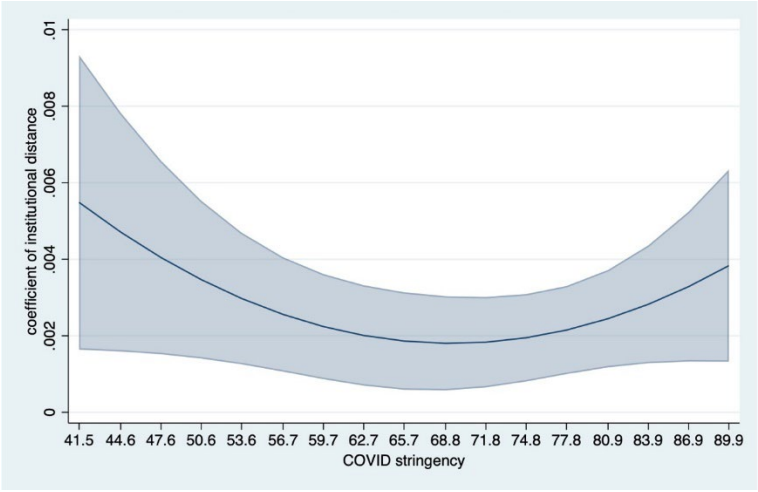
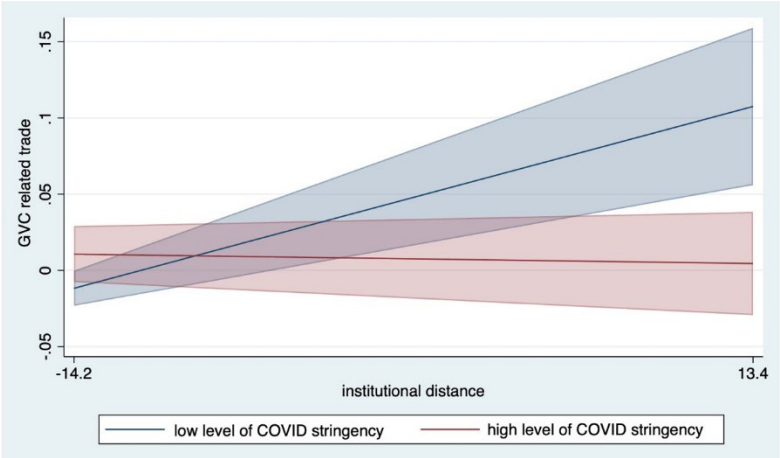


Figure 2: The relationship between country's GVC related trade and institutional distance as a function of home country's stringency of lockdown policies during COVID-19 (with 95% confidence interval)



Discussion and Conclusion

This study introduces a novel u-shape moderator and a linear moderator into the research of positive institutional distance and GVC participation by partners, mainly

examining how positive institutional distance affects developing country firms' GVC participation by partners and how stringency of lockdown policies during COVID-19 in host country (U-shape) and home country (linear) heterogeneously moderates this main effect. We found that positive institutional distance has positive effect on developing home country firms' GVC participation in the host country. We also found that host country's stringency of lockdown policies moderates this relationship in a u-shaped way (that the relationship is weakest for an intermediate level of host country's stringency of lockdown policies); while home country's stringency of lockdown policies negatively moderates the main effect.

The study has several contributions. First, we provide a fine-grained analysis of the institutional distance-GVC participation relationship across different COVID-19 lock-down environment to enrich an institution-based view of GVC participation. In particular, we find that stringency of lockdown policies during COVID-19 in home country and host country heterogeneously impact the effectiveness of positive institutional distance on the facilitation of developing firms' GVC participation. We identify the new boundary conditions in COVID-19 period that institutional distance, such a recognized negative effect, may positively promote the GVC participation. We tease out how institution-based and COVID-19 lockdown policy-based variables complement and interact to predict firms' GVC participation decisions. This provides important insights into how GVC production will be maintained in the future normalized pandemic period.

Second, our study contributes to GVC literature and the construction of deepening links between pandemic-related factors and traditional literature streams. Focusing on one of the main COVID-19 related factors, the lockdown stringency, we contribute to the GVC literatures that debating on structural adjustment and resilience of GVC in the uncertain times (eg. Inoue & Todo, 2020; Pichler et al., 2020; Bonadio et al., 2020; Hayakawa & Mukunoki, 2021). We theoretically introduce a cognitive prescription for developing country companies' reactions in GVCs in the COVID-19 period. The links we explore is a pilot for new mechanisms that may arise from other potential COVID-19-related factors in the future normalized pandemic era and variables studied in traditional literatures.

Third, this paper contributes to crisis communication management by considering the effects of positive institutional distance from perspective of information symmetry and communication in COVID-19 crisis. We find that one of the reasons that the moderating effects is different from home country and host country, in other words the underdeveloped institutional environment and better institutional environment, is the information exchange channels. This finding enriches our understanding towards the crisis communication management mechanisms in COVID-19 period by explaining the potential strengths and weaknesses with various information sources firms may face in the sudden crisis.

Finally, we make two small methodological contributions. First, we test a u-shape moderating effect of stringency of lockdown policies during COVID-19 in host country on the relationship between positive institutional distance and developing country

firm's GVC participation. The test of u-shape moderators, that received relatively less attention in previous studies (eg. Nagengast, Evanschitzky, Blut & Rudolph, 2014; Schilke, 2014), can provide new ideas for later scholars to rethink about main effect and the moderators. When confronted with models with non-linear terms, future scholars could creatively re-design their research models and critically re-think previous research models with non-linear independent variables. Second, we use a very comprehensive data of GVC partnership of firms from 32 developing countries around the world. By controlling both the home and host countries variables, this data allows us to explore the nature and causes of both country-of-origin variation and host country variation that emerges so powerfully in GVC participation decisions.

Implication for manager and policy makers

Our study has Implication for manager and policy makers. For both parties involved in GVC. The rational implements of institutional distance may help build stronger partnerships between bilateral firms. The impact of the COVID-19 pandemic is not limited to the virus itself, but also the following policy interventions, such as the lockdown stringency. Therefore, to achieve a stable development of companies in GVC, it is important to pay close attention to the policy changes of partner countries in COVID-19 pandemic period and to rationally take advantage of the heterogeneity of the stringency in the home country and the host country. For policymakers in host countries, holding consistency in lockdown policies is important in influencing firms' cross-border activities. Because inconsistent and half-way policies will allow the

lockdown stringency to fluctuate between low and high, thereby harming the domestic economic structure and the cooperation of GVC partners.

Limitations and future study

This study is limited to missing data from the early days of the 2020 outbreak. In the initial period of the COVID-19, some countries did not have time to establish a response mechanism to collect pandemic-related data. This study only used one year data, but the pandemic may become long-term and normalized in the future. Therefore, future research can take the time factor into account and turn the data into panel data for research, which could avoid potential endogenous issues.

Based on the institution-based view, this paper explores the moderating role played by the stringency of lockdown policies during COVID-19 on institutional environment -GVC participation relationship. Future research may take this study as a reference, using resource-based view, industry-based view, discourse-based view, etc., to further explore the linkages between other factors related to the pandemic and traditional literature streams. For example, how does the public opinion under the pandemic affect the choice of GVC host countries? How the uncertainty caused by the pandemic affects the political cleavage caused GVC between countries, etc. Future research may take these as interesting directions.

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Extended Abstract

In this study, we adopted case studies of four multinational enterprises (MNEs) subsidiaries in China to explore how Confucianism influences corporate social responsibility (CSR) globalization and localization. We collected both archival data and first-hand data via 14 in-depth interviews in 2021. Our findings suggest that Confucianism implicitly influences CSR during the local implementation process. Specifically, Confucianism can accelerate CSR globalization and tailor specific local CSR, achieving 'glocalization' through a 'reconciliation' mechanism, while hindering the CSR globalization through a 'interference' mechanism. We provided implications for CSR practitioners in the MNEs and suggestions for future research directions.

Keywords: corporate social responsibility (CSR), Confucianism, multinational enterprises (MNEs), globalization, localization

Introduction

The linkage between traditional Chinese cultures in general and Confucianism in particular and corporate social responsibility (CSR) has increased in significance and theories and practices have been developed over the two decades (e.g., Du, 2016; Ip, 2009). After China's entry into World Trade Organization in 2001, multinational enterprises (MNEs) have increasingly established subsidiaries in

China (Miska et al., 2016). While Chinese companies introduced CSR late, formulate less systematic CSR policy, and are deeply influenced by Chinese institutions, the subsidiaries of MNEs in China, as hybrid organizations, have engaged both mature global CSR standards and local CSR adaptation (Yin & Jamali, 2016). Therefore, the influence of Confucianism on CSR can be varied between local Chinese corporations and MNEs (China as host country). There would be integrations and conflicts when global CSR standards meet Confucianism, which presents an opportunity to advance knowledge by addressing both theoretical and practical gaps in relation to how Confucianism impacts CSR globalization and localization.

By conducting case studies of MNEs subsidiaries in China, in analysis of interviews and archival data, we found that Confucianism implicitly influences CSR globalization and localization during the local implementation process through 'reconciliation' and 'interference' mechanisms. We proposed that the greater Confucian values reconciled the global CSR standards, the higher their global CSR integration and the higher their local CSR responsiveness will be. By contrast, the greater Confucian values against the global CSR standards, the lower their global CSR integration will be. This study provides some managerial implications for the CSR practitioners not only in the MNEs that set subsidiaries in China, but also in the Greater China area and East Asia that are deeply rooted in Confucianism.

Literature

MNEs face pressures to balance globally integrated with locally responsive CSR (Husted & Allen, 2006; Miska et al., 2016). The extant literature suggests the informal institutions, such as the national cultures and social norms are the important drivers of global and local CSR (e.g., Jamali & Neville, 2011; Yang & Rivers, 2009). However, limited literature clarifies how specific national cultures of host countries impact CSR globalization and localization. As a key part of traditional Chinese cultures and informal institutions in China, Confucianism is strongly related with CSR. Overall, in the context of local Chinese companies, the positive sides of Confucianism can enhance CSR (e.g., Ip, 2009; Wang & Juslin, 2009); while the negative sides hinder the CSR (e.g., Du, 2016). The influence of Confucianism on CSR in MNEs' China subsidiaries is still unclear. We aimed to fill these research gaps.

Methods and Data

We conducted multiple case studies of four subsidiaries of MNEs from the U.S. and Ireland in China. The four MNEs subsidiaries are located at Dalian Software Park, a high-tech industrial zone founded in 1998. All sample companies are in the same industry (information technology). They are both Fortune and Forbes 500 companies in the world, holding mature management system, CSR practices and international strategies.

Between 7th July and 30th December 2021, we conducted 14 semi-structured interviews in total and interviewed at least three informants in each company. Interviewees covered a variety of management levels and are familiar with their CSR and corporate culture. The interviews were carried out face to face or online in Chinese or English. Each interview lasted between 50 and 100 minutes. All the interviewed companies and managers were assured of anonymity and confidentiality, which helped us to ensure more effective communication and trustworthy information.

Beside the primary data of interviews, we also collected archival data such as CSR reports, official websites, and corporate documents from the secondary data sources. We transcribed the audio-recording or written notes of interviews into systematic word-transcripts at /iflyrec.com/. In terms of the coding strategy, we mainly applied the analytical process clarified by Strauss and Corbin (1998) and Gioia et al. (2013). Nvivo 12 software was used to support our data coding.

Findings

Figure 1 presents the basic summary of the findings. The MNEs under study adopt a top-down approach to implement global CSR formulated by headquarters, while the implementation process in China subsidiaries is bottom—up, consisting of both global and local CSR practices. Confucian values only influence the CSR implementation process in subsidiaries implicitly instead of affecting CSR-framework formulation in headquarters. When global CSR standards meet Confucianism in MNEs' China subsidiaries, Confucianism influences CSR globalization and localization by two mechanisms, namely 'reconciliation' and 'interference'.

Specifically, the reconciliation mechanism includes three dimensions. Firstly, some Confucian values

are in common with the global CSR principles. For instance, the core value of Confucianism— 'Ren' (benevolence) and the vision of Confucianists—the Great Harmony show commonalities with the 'diversity and inclusion' principle of all four MNEs. Secondly, the 'Zhong Yong' value, or the maintenance of balanced moderation, makes local employees in MNEs subsidiaries easier to understand and adopt new global CSR standards in their own ways, such as LGBTQ inclusion. Accordingly, Dalian subsidiary of MNE1 implements related CSR by presenting videos while subsidiaries in West countries organize parade. Thirdly, some Confucian values may reinforce the global CSR standards. For example, adhering to family values of Confucianism results in better employee benefits. MNE4 in China offers employees extra holiday, namely 'family care'. In these regards, Confucianism may enhance the implementation of global CSR, at the same time practicing CSR with local features, achieving 'glocalization'.

By contrast, the interference mechanism shows the process of Confucianism being in contradiction to the global CSR standards. For example, the male superiority inherited in Confucianism weakens female leadership, 'Li' (etiquette) hinders superior and subordinate equality, and the 'He' (harmony) value compromises consumer rights and interests. In this regard, subsidiaries may implement lower local CSR standard than the global CSR one proposed by headquarters, which in turn hinders the CSR standardization of MNEs.

Based on our findings, we developed propositions and proposed the theoretical framework shown in Figure 2.

P1: Confucian values that are reconciled with global CSR standards can accelerate CSR globalization at the same time tailoring specific local CSR. In other words, the greater Confucian values reconciled the global CSR standards, (a) the higher their global CSR integration, and (b) the higher their local CSR responsiveness. **P2:** Confucian values that against the global CSR standards, can hinder the CSR globalization. In other words, the greater Confucian values against the global CSR standards in MNE subsidiaries, the lower their global CSR integration.

Discussion

This research is one of the few studies that consider the antecedent role of specific national cultures on global and local CSR. It contributes to filling the literature gaps by conducting case studies of MNEs (China as the host country). It sheds light on the international business, CSR, and culture literature by exploring how Confucianism influences CSR globalization and localization, and uncovering the two key mechanisms. In terms of managerial implications, MNE subsidiaries in China and the Greater China area need to pay more attention to the integrations and conflicts between Confucianism and West oriented CSR standards. West MNEs headquarters need to take national cultures of host countries into consideration during the CSR policy making process.

Future research directions may extend the samples to broader sectors and areas; explore the roles of other national cultures on global and local CSR; shift the attention from MNEs' subsidiaries in China (China as host country) to Chinese MNEs' headquarters (China as home country); or examine the generalizability of the findings quantitively.

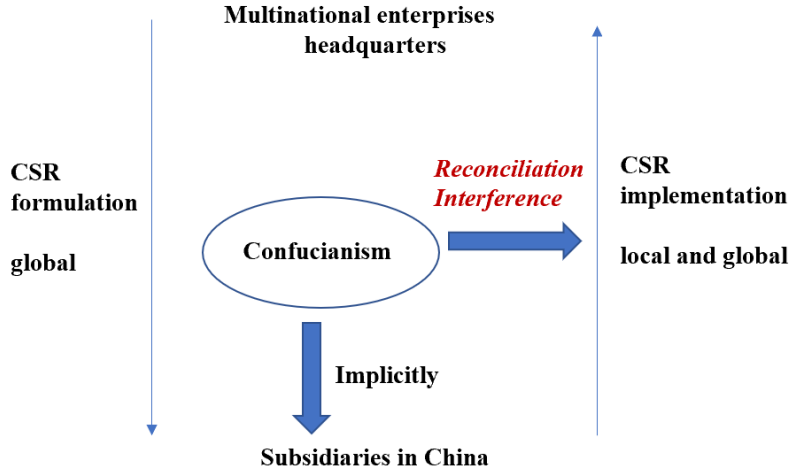

Figure 1. Basic summary of the findings

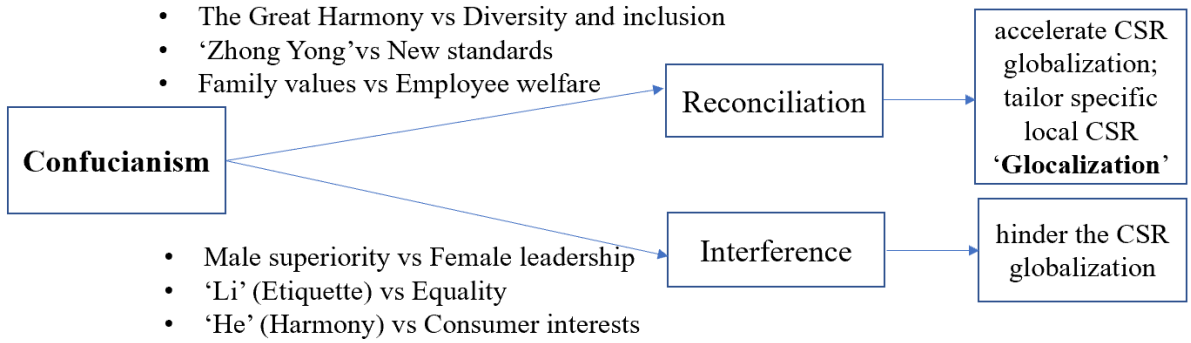

Figure 2. Theoretical framework of how Confucianism influences CSR globalization and localization.

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Political Turbulence and Decision Making of Potential Entrepreneurs: Evidence from Anti-corruption Campaign in Emerging Economics

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Political turbulence and decision making of potential entrepreneurs: Evidence from anti-corruption campaign in emerging economics

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Extended Abstract

This paper investigates whether and how political turbulence influence the decision making of starting business for entrepreneurs by focusing on the anti-corruption investigations since 2012 in China. Using a panel dataset of China Family Panel Studies (CFPS) surveys over the period 2012 to 2016, we find that exposure to anti-corruption campaign increases rather than decreases the possibility of individual entrepreneurship. Furthermore, we test two potential mechanisms underlying the focal relationship: political experience and social comparison. We find that those people having positive interactions with government before or affiliated with lower social hierarchy are more likely to start new business than others.

Keyword: political turbulence; anti-corruption; entrepreneurship; transaction costs

1. Introduction

Corruption, defined as the abuse of public office for private gain (Rodriguez, Uhlenbruck, & Eden, 2005; Treisman, 2000) has always been an important agenda in the national growth in both developed and developing countries. Given its harmful consequences brought to the society, including impairing legitimacy of political system (Warren, 2004), reducing administrative efficiency and effectiveness of public services (Rose-Ackerman, 1999), eroding the quality of government (Rothstein & Teorell, 2008), and destroying the enforcement of the rule of law (Tanzi, 1998), various efforts on

anti-corruption have been made by policy makers. In particular, an emerging literature has examined the role of anti-corruption in shaping organizational outcomes such as financial performance, innovation, and firm strategies such as relationship investment (Hu, Li, Duncan, & Xu, 2020), political strategies (Jiang, Jia, Bai, & Bruton, 2021), providing evidences linking macro policy on anti-corruption and micro organizational response.

2. Literature Review and Theoretical Development

However, the understanding on the relationship between anti-corruption and individual decision making is not clear. One stream of literature argues that the purpose of anti-corruption movement is to signal political legitimacy to the society, and convey the belief of fairness and justice in governing the country (Giannetti, Liao, You, & Yu, 2021; Hu et al., 2020). This work highlights the bright side of anti-corruption movements through showing government's responsiveness and benevolent intentions. As a result, public support towards government increases. Another stream of literature holds the opposed view that fighting against corruption may create huge shocks by the excessive corruptions and scandals of politicians revealed to the public in the investigations, which in turn updating citizens' beliefs about the integrity of government officials, leading to finally being disenchanted with the state (Kang & Zhu, 2021; Wang & Dickson, 2022). Such a paradox is still not well understood in the field of individual entrepreneurship.

Therefore, how effective is temporary anticorruption enforcement at encouraging individual

entrepreneurship? We identify at least two research limitations in the existing literature on anti-corruption and entrepreneurship. First, the decision to engage in entrepreneurship not only depends on the availability of entrepreneurial opportunities, but also the difficulty in capturing value for their own purpose in the new venture (Baker & Nelson, 2005). Prior research has primarily focused on the role of anti-corruption in reducing transaction costs, improving the allocation of resources among actors in the market, and finally facilitating the emergence of entrepreneurial opportunities (Kong & Qin, 2021), while ignoring the role of prior beliefs of entrepreneurs in assessing the difficulty of capturing values they create in new ventures. Political officials' "ethical deficit" revealed by anti-corruption (Villoria, Van Ryzin, & Lavena, 2013) is likely to update individual' prior beliefs to government, amplifying their perception on the difficulty in obtaining potential return on opportunity.

Second, recent work on the impacts of anti-corruption has taken place primarily within developed countries, people are not shocked by scandals of political officials given the function of formal institutions. In these countries, formal and informal monitoring mechanisms are well established, such as legal systems and social medias, providing accurate and timely information on political officials before anti-corruption. In developing countries, however, the lack of these established formal institutions may keep the opportunistic behaviors of political officials secret until the beginning of anti-corruption, thus, some potential entrepreneurs may exit from new ventures since the changes of perceptions and expectations (Finkel & Gehlbach, 2020).

3. Method and Results

To address these two limitations in the prior literature, we propose a theoretical framework and test whether and how macro-level anti-corruption policies influence entrepreneurship at individual level in the context of China. We test our theory using a set of longitudinal data from China Family Panel Studies (CFPS) surveys over the period 2012 to 2016. By focusing on the Chinese anti-corruption campaign since 2012, our identification strategy relies on the randomness between the staggered timing of anti-corruption investigations in different provinces and the timing of the field survey of CFPS, and show an exogenous variation in respondents' exposure to the anti-corruption investigations in the local province. As shown in Table 1, our findings suggest a positive relationship between the exposure to anti-corruption investigations and the possibility of individual entrepreneurship. We further find that this positive effect depends on whether individuals' interactions with governments and their economic class. In particular, those individuals that have not experienced bad interactions with government officials are more likely to becoming entrepreneurs after anti-corruption investigations, and individuals who are themselves embedded in lower economic class also more likely to become entrepreneurs. All of these results are robust even we conduct a series of additional tests.

4. Conclusion

Our findings contribute to the literature in two ways. First, we contribute to the literature on the

institutions and entrepreneurship. By focusing on corruption, this specific dimension of institutions, we show how changes of corruptive environment can shape the emergence of entrepreneurship, which provides institutional interpretation for incentives of entrepreneurship. Second, we contribute to the literature on the social benefits of anti-corruption campaign. Prior research on the effectiveness of temporary and intensive anticorruption enforcement is mixed, and the understanding of individual response to anticorruption enforcement is very limited. Our study adds value to this stream of work by exploring two distinct channels by which the exposure to anticorruption campaign influences individual decision making in entrepreneurship.

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Table 1 Baseline results

	DV=Entrepreneurship								
	Full sample	Government quality		Unequal political treatment		Economic status		Social status	
		High	Low	No	Yes	High	Low	High	Low
	M1	M2a	M2b	M3a	M3b	M4a	M4b	M5a	M5b
Post-anti-corruption	0.011**	0.023***	-0.004	0.016***	-0.014	0.000	0.028***	0.007	0.017
	(0.005)	(0.007)	(0.008)	(0.005)	(0.013)	(0.007)	(0.008)	(0.006)	(0.010)
Gender	0.027***	0.023***	0.033***	0.027***	0.027***	0.031***	0.024***	0.028***	0.026***
	(0.003)	(0.003)	(0.004)	(0.003)	(0.006)	(0.003)	(0.003)	(0.003)	(0.004)
Age	-0.001***	-0.001***	-0.001***	-0.001***	-0.002***	-0.001***	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Urban	0.056***	0.053***	0.059***	0.051***	0.079***	0.056***	0.052***	0.055***	0.057***
	(0.003)	(0.004)	(0.004)	(0.003)	(0.008)	(0.004)	(0.004)	(0.004)	(0.005)
Party member	-0.023***	-0.017*	-0.027*	-0.031***	0.009	-0.035***	0.003	-0.030***	0.019
	(0.008)	(0.010)	(0.014)	(0.009)	(0.022)	(0.010)	(0.015)	(0.009)	(0.024)
Marriage	0.046***	0.042***	0.049***	0.047***	0.038***	0.064***	0.033***	0.049***	0.040***
	(0.003)	(0.004)	(0.004)	(0.003)	(0.009)	(0.004)	(0.004)	(0.004)	(0.005)
Education	0.007***	0.005***	0.010***	0.005***	0.013***	0.005***	0.009***	0.007***	0.006***
	(0.001)	(0.001)	(0.002)	(0.001)	(0.003)	(0.001)	(0.001)	(0.001)	(0.002)
Ethnic minority	0.001	0.004	0.001	-0.002	0.016	0.003	-0.000	-0.001	0.006
	(0.006)	(0.006)	(0.008)	(0.006)	(0.012)	(0.007)	(0.006)	(0.007)	(0.009)
Political treatment	0.026***	0.022***	0.031***			0.030***	0.022***	0.026***	0.027***
	(0.003)	(0.005)	(0.005)			(0.005)	(0.004)	(0.004)	(0.005)
Government quality	-0.002*			-0.001	-0.007**	-0.004**	0.000	-0.003*	-0.001
	(0.001)			(0.001)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)
Economic status	0.008***	0.007***	0.010***	0.007***	0.014***			0.007***	0.005**
	(0.001)	(0.001)	(0.002)	(0.001)	(0.003)			(0.001)	(0.002)
Social status	-0.004***	-0.003*	-0.004**	-0.003**	-0.007**	-0.001	-0.004***		
	(0.001)	(0.001)	(0.002)	(0.001)	(0.003)	(0.002)	(0.001)		
Provincial GDP	0.018	0.096***	-0.064*	0.020	-0.006	0.002	0.035	0.039	-0.014
	(0.024)	(0.032)	(0.038)	(0.026)	(0.072)	(0.034)	(0.035)	(0.030)	(0.044)
Provincial GDP 2%	-0.001	-0.005*	0.004	0.001	-0.009	-0.000	-0.002	-0.001	-0.001
	(0.002)	(0.003)	(0.003)	(0.002)	(0.006)	(0.003)	(0.003)	(0.003)	(0.004)
Provincial GDP 3%	-0.002	-0.004	0.002	0.000	-0.010**	-0.001	-0.003	-0.001	-0.003
	(0.002)	(0.003)	(0.003)	(0.002)	(0.005)	(0.003)	(0.003)	(0.003)	(0.004)
Province FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Wave-year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	67119	38102	31257	55417	11699	37590	33245	45735	21563
R squared	0.052	0.052	0.054	0.047	0.069	0.055	0.052	0.051	0.056

Robust Standard errors are shown in parentheses and clustered at individual level.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

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The Non-linear Influence of OFDI Speed on the Innovation Quality of High-tech Firms in Terms of Intensity and Diversity: Based on the Moderating Role of Absorptive Capacity

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The Non-Linear Influence of OFDI Speed on the Innovation Quality of High-Tech Firms in terms of Intensity and Diverity: Based on The Moderating Role of Absorptive Capacity

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Extended Abstract

Abstract: This paper investigates the effect of OFDI speed on firm innovation quality. Using a dataset of Chinese high-tech firms, we test the effects of OFDI speed in terms of intensity and diversity. Results reveal a curvilinear U-shaped relationship, suggesting the costs of OFDI speed eventually outweigh the benefit after critical levels of intensity and diversity. In addition, we find that a firm's absorptive capacity during foreign expansion may have a positive moderating impact on the relationship between OFDI speed and innovation quality, which suggests that the effect is contingent on the firm's absorptive capability in dealing with the complexities inherent in international business.

Keywords: Speed of OFDI; Innovation quality; Absorptive capacity

1. **Introduction**

With the deepening implementation of Innovation driven development strategy, China's innovation output increased year by year, patent filings in 2021 accounted for 45.7% of the world, ranking No.1 in the world for 10 years, but the fact behind it is that the proportion of patent that can truly commercialized and the contribution rate to technological progress of scientific and technological achievements are both low. In the final analysis, it's a matter of inadequate quality of innovation. At the same time, due to the acceleration of technological innovation and its diffusion, the product life cycle is greatly shortened. More and more enterprises choose to invest abroad to obtain reverse technology spillover and realize their own technology innovations(HEAD K & RIES J,2008; Li Mei & Zhu Yun & Li Zhu Bo,2020). Under the influence of "Uppsala model", most scholars have used static thinking to analyze the impact of the degree of foreign investment on firm innovation, while ignoring the impact of the rate of foreign investment on innovation. Therefore, their studies cannot explain the fact that firms with the same degree of foreign investment have different levels of technological innovation.

Taking innovation quality as the research perspective, this paper studies the influence of dynamic changes of firm's overseas investment on innovation quality, and tries to explore from the following aspects: (1) From the perspectives of market scope and resource commitment level, the post-entry speed of forein investment is divided into the speed of intensity and diversity to explore the respective influence of two-dimensional OFDI speed on innovation quality of Chinese high-tech enterprises. (2) reveal how the absorption capacity moderate the relationship of dynamic expansion process of foreign investment and innovation quality; (3) conduct heterogeneity test according to regions and ownership.

2. Main Body

2.1. Main text

2.1.1. Theoretical background and hypotheses

The intensity of OFDI refers to the commitment and input degree of resources of enterprises in the same overseas market. The greater intensity of OFDI is, the deeper firms embed in the host country's market. In the early stage, setting up more overseas subsidiaries made firm have great access to cutting-edge technology and local market demand. The subsidiaries can make high-quality achievement and feed back to the parent company through knowledge spillover by imitation innovation activities (Liu Sukun & Wang Le & He Wentao et al., 2022). But if OFDI intensity accelerates, the diseconomies of time compression began to emerge, which would result in the reduction of the quality of firm innovation because of many reasons, such as s unreasonable resource allocation, policy suppression of the host country and decision-making errors. This leads us to present the following hypothesis:

Hypothesis 1. There is an inverted U-shaped relationship between OFDI speed of intensity and innovation quality.

The diversity of OFDI refers to the geographical diversity of overseas markets selected by firms. The geographical diversity of overseas markets would increases the opportunities to acquire differentiated cutting-edge knowledge and technology(Kim W C &Hwang P & Burgers W P, 1993), which help improve firm’s ability to learn, absorb and integrate heterogeneous knowledge. But likewise, as geographic expansion accelerates, firm’s innovation would also be limited by the diseconomies of time compression and the complexity of international market expansion. This leads us to present the following hypothesis:

Hypothesis 2. There is an inverted U-shaped relationship between OFDI speed of diversity and innovation quality.

From the perspective of OFDI intensity, the knowledge firms can get all from the specific host country, so absorptive capacity is reflected in the degree of master and applicate specific knowledge. At the beginning, the increasing absorptive capacity enables numerous subsidiaries in the same market to cooperate efficiently

to integrate foreign advanced technical knowledge to back to the parent company faster(Chen V Z & Jing L & Shapiro D M, 2012). However, the rapid growth of absorptive capacity would induce host country's policy suppression and competitors' knowledge blockade, which will degrade the quality of innovation instead. This leads us to present the following hypothesis:

Hypothesis 3. Absorptive capacity positively moderates the effect of OFDI speed of intensity on innovation quality, and can delay the negative effect caused by gradual OFDI intensity acceleration to some extent.

From the perspective of OFDI diversity, as OFDI is scattered in different countries, different host countries require subsidiaries to learn, integrate and apply heterogenous knowledge, reducing the dependence on specific knowledge and experience. It would be more difficult to rapidly integrate knowledge and experience, so the positive and negative effects of absorptive capacity would be weakened, and the adjustment of innovation quality would be limited.

Hypothesis 4. Absorption capacity positively moderates the effect of OFDI speed of diversity on innovation quality, but the moderating effect is limited.

2.1.2. Methods and results

As for the indicators selection, Citation-weighted patents is used to indicate innovation quality, and the number of overseas subsidiaries and overseas markets is combined with the "time" dimension to represent the OFDI speed of intensity and diversity. The R&D investment intensity is used to indicate absorption capacity, and age, size, type, market competition, government subsidy et al. are added to the model as the control variables. The empirical sample includes 5570 observations from 1143 enterprises. Since the years of initial foreign investment are different, the data are unbalanced panel data. After the Hausman model test, the value of p is zero, that is, the original hypothesis is rejected, so the two-way fixed effect model is selected to control the industry and annual effects for estimation.

We show the panel-data analysis results of our regression model in Table 1, model2 and 4 meet the three conditions for testing the inverted U shape proposed by Lind & Mehlum(Lind J T & Mehlum H. , 2010),

which support Hypothesis 1a and 1b. Fig.2 illustrates the impact of OFDI speed of diversity on innovation quality is larger than the impact of OFDI speed of intensity and the OFDI speed of diversity reaches the inflection point earlier. Besides, we add the interactions with absorptive capacity in the Model 3 and 5. The result support the Hypothesis 2a, but reject Hypothesis 2b.

2.2. Tables and Figures

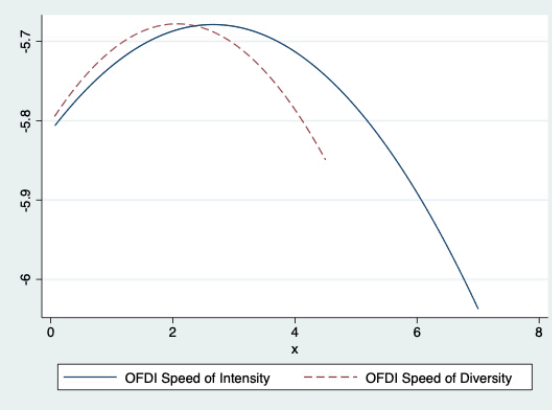
2.2.1. Tables

Table 1 Results of regression analysis on Citation-weighted patents.

Variables	Conrol variables	OFDI speed of intensity		OFDI speed of diversity	
	(1) lnCWP	(2) lnCWP	(3) lnCWP	(4) lnCWP	(5) lnCWP
Age	-0.069* (-1.90)	-0.013 (-0.35)	0.028 (0.73)	-0.004 (-0.10)	0.050 (1.26)
Size	0.214*** (18.36)	0.355*** (20.94)	0.364*** (21.18)	0.355*** (21.04)	0.363*** (21.25)
Mc	-0.239*** (-12.15)	-0.381 (-1.46)	-0.599* (-1.93)	-0.389 (-1.48)	-0.606** (-1.98)
Gs	-0.028* (-1.79)	-0.039* (-1.67)	-0.001 (-0.04)	-0.041* (-1.76)	-0.001 (-0.05)
RoaB	0.543*** (3.62)	1.191*** (5.93)	0.436** (2.07)	1.184*** (5.81)	0.372* (1.74)
TSpeed_I2		-0.019*** (-4.19)	-0.014*** (-3.10)		
TSpeed_I		0.101*** (3.49)	0.055** (1.96)		
TSpeed_D2				-0.029** (-2.29)	-0.164*** (-4.24)
TSpeed_D				0.120*** (2.67)	0.330*** (3.94)
TSpeed_I2*AC			-0.006*** (-4.45)		
TSpeed_I*AC			0.042*** (4.51)		
TSpeed_D2*AC					-0.023 (-1.54)
TSpeed_D*AC					0.082** (2.46)
AC			0.050*** (8.97)		0.050*** (8.88)
_cons	-3.133*** (-13.68)	-5.813*** (-4.63)	-5.269*** (-3.58)	-5.802*** (-4.60)	-5.353*** (-3.68)
Insudtry	No	Yes	Yes	Yes	Yes
year	No	Yes	Yes	Yes	Yes
N	5381	3509	3404	3509	3404
adj. R^2		0.306	0.335	0.304	0.335

t statistics in parentheses, $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

2.2.2. Figures



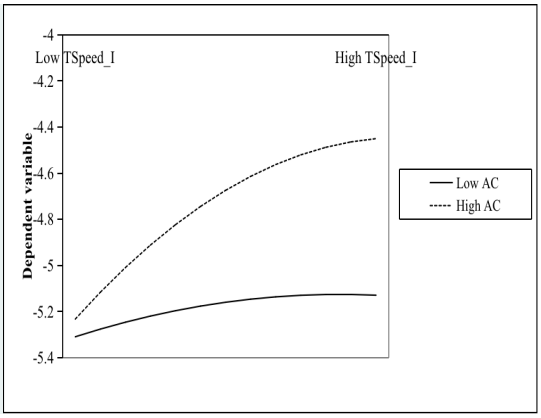


Figure 1 The inverted U-shaped relationship between OFDI Speed and innovation Quality.

Figure 2 Moderating effect of absorptive capacity on the relationship between OFDI speed and innovation quality in intensity

3. **Conclusion**

Our study reveal a curvilinear U-shaped relationship between firm's OFDI speed and its innovation quality. Initially, knowledge spillover and imitation innovation activities positively influence innovation quality as OFDI speed of intensity and diversity increase. But when OFDI speed of intensity and diversity arrive a certain extent, the costs of OFDI acceleration eventually outweigh the benefits and thus result in the curvilinear. By comparing the curvilinear, we find that the impact of OFDI speed of diversity on innovation quality is larger than the impact of OFDI speed of intensity and reaches the inflection point earlier. Meanwhile, absorptive capacity plays a positive moderating role between OFDI speed of intensity and innovation quality but is ineffective between OFDI speed of diversity and innovation quality. We infer that OFDI speed of diversity may increase the difficulty of learning, absorbing and integrating knowledge, so the positive and negative effects of absorptive capacity are weakened.

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Foreign Direct Investment and City Innovation Output in Urban China

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Foreign Direct Investment and City Innovation Output in Urban China

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Extended Abstract

Understanding the impacts of foreign direct investment (FDI) on innovation output and its mechanism and temporal-spatial heterogeneities are of significance for enhancing the vitality of economic development. This study attempts to examine the relationship and the associated regional heterogeneity between the FDI and innovation performance in China's 70 large- and medium-sized cities from 2013-2018. The results show that the effect of FDI on innovation output is positive and is more significant in southern China. In addition, city leaders' hometowns and working experiences in the south also have a positive effect on this relationship, but overseas study or work experience does not have a significant effect on this relationship.

Keywords: Innovation output; Foreign direct investment; Regional heterogeneity

1. Introduction

Foreign direct investment (FDI) is a common way for foreign capital to invest in a host country, which can significantly promote industrial upgrading as well as social and economic development. The scale of FDI absorption in China has greatly increased since the Reform and Opening-up. Under this process,

FDI has contributed to socio-economic development and its additional collateral values such as human and knowledge spillover have served as an important driving force for China's economic development. The increase in FDI contributes not only to economic development but also to the knowledge and technology creation. Haskel et al. (2007) point out that FDI has positive spillover effects on the industries of the host countries since with the entry of foreign investors comes knowledge spillover with the exchange of talent, capital, and technology.

At the city level, industrial and technological upgrading under the FDI influences can bring various positive feedbacks, including an increase in the city's innovation output. In China, does FDI enhance innovation output at the city level? If so, through which mechanism will this impact affect society's innovation? Will this relationship vary across regions and socioeconomic development logic? In China, an increase in FDI is a joint effort of the government and enterprises, as China's economic system has undergone a change from a planned economy to a market-based economy, and the government's influence on the operation of the economy still exists. To test this premise, this paper examines the relationship between FDI and innovation output in 70 large and medium-sized cities in China under heterogeneity between the northern and southern regions and understands the mechanism of the formation of this influence through the moderating variable of the personal traits of the city leaders.

2. Literature and Framework

2.1. Literature review

The impacts of FDI on innovation output have received much attention along with the increasing international trade activities. Previous studies have identified many effects of FDI on city-level innovation output (Chang, 1991; Martin and Salomon, 2003). Inward FDI is an investment behavior based on the prospective estimation of city policies, specific industries, and firms, so the innovation output of cities is not the only attraction for inward investment, but also industries, and specific firms' future can be the targets of investment in host countries. Currently, there are three directions of theories underlining the impact of FDI on innovation output: the promotion theory, the suppression theory, and the dual theory.

2.1.1. Promotion Theory

The entry of FDI indicates that industries and cities are attractive to foreign investors, and the signaling effect of this behavior can also stimulate the competitive power of other enterprises and enhance their innovation ability. The promotion effect of FDI on the host country's independent innovation output is reflected in its spillover effect, competition effect, imitation effect, correlation effect, and signaling effect. MacDougall (1960) suggests that FDI brings about technology spillovers and generates economic externalities. Caves (1971) analyzes the marginal productivity of manufacturing industries in Australia and Canada and found a positive correlation with the output share of foreign firms. In China, many empirical studies also investigate the FDI and innovation connections from the perspective of intra-industry technology spillover effects in various locations.

2.1.2. Suppression Theory

On the contrary, some scholars have argued that the effect of FDI on innovation output is non-existent or even negative. This is because firms in host countries may adopt strategies to reduce their autonomy and don't have enough R&D expenditure, reducing their competitiveness. Host country firms choose to follow the strategy of foreign firms with higher technology levels, which will cause a crowding-out effect in the long run and thus lose their technological advantages in the market. Some scholars also argue that the suppression effect is caused by the backward economic conditions of some regions.

2.1.3. Dual Theory

The dual theory asserts that the relationship between FDI and innovation output depends on the moderating effect of many other factors and the relationship is not in one definite direction. Cantwell (1989) finds that the role of FDI shows a correlation with the host country's firms' technology level: technology spillovers are positively correlated in the case of high-level industry development. There are many other factors involved in the study, such as the "threshold effect" of human capital, the effect of regional economic level, and intellectual property protection.

2.2. Research hypotheses

Considering the various and dynamic influencing processes, this paper attempts to examine the promotion effect, heterogeneity, and moderating effect of FDI on innovation performance. Three hypotheses are proposed to be addressed in this research. Hypothesis 1 is for the promotion analysis: there is a positive impact of FDI on urban innovation output. Hypothesis 2 is for the heterogeneity analysis: the impact of FDI on urban innovation output is more significant in southern cities than in northern cities. Hypothesis 3 is for the moderating effect analysis: city leaders' spatial differences in hometown, working and overseas experiences between northern and southern China can significantly influence the FDI and innovation connections.

3. Method and Results

3.1. Variables and method

The dependent variable in this model is the logarithm of the "total number of patent applications" (one-year lagged) of 70 large and medium-sized cities across China from 2014-2018. The core independent variable in this model is the actual annual amount of FDI used. The control variables include GDP per capita (GDP), science and technology expenditure (STE), education expenditure (EDU), proportion of secondary industry population (SEC), proportion of import and export volume of GDP (IEV), gender ratio (GED), and population growth rate (POP). In terms of the moderating variables, the backgrounds of hometown (HMT), previous working place (PWK), and overseas experience (OVS) of the municipal party secretaries and mayors are selected. For the instrumental variables, it adopts the length of time since the opening of the first high-speed rail in a city (HSR).

3.2. Results

3.2.1. Promotion effect analysis

The overall results of the main regression after the two-stage regression of instrumental variables are shown. FDI can significantly and positively affect the number of patent applications (β=0.512***), and

among the control variables, R&D expenditure also positively affects the number of patent applications (β=0.523**), indicating that the science and technology expenditure in prefecture-level cities positively and significantly affects innovation output. This result supports Hypothesis 1.

3.2.2. Heterogeneity analysis

A sample of 70 large- and medium-sized cities is divided into southern and northern groups to compare and investigate whether heterogeneity exists between cities in these two regions. From the regression results, it can be seen that the impact of FDI on innovation output in southern cities is significantly positive, which is consistent with the previous hypothesis. The regression coefficient of FDI is not significant in northern cities but is significant at a 5% level in the southern cities.

3.2.3 Moderating effect analysis

Among the moderating variables, municipal party secretaries' and mayors' hometowns being in the south can positively and significantly affect the relationship between FDI on innovation output (β=0.246** and β=0.454* respectively). Compared with cities where the governor has northern hometown, FDI significantly increases urban innovation output in cities where the leaders have southern hometown. In terms of previous working place, municipal party secretaries' and mayors' previous working place being in the south also positively and significantly affects regional innovation output (β=0.371**). FDI has significantly increased innovation output in cities where the governor has a southern previous working place. The overseas experience of municipal party secretaries and mayors is not significant.

4. Conclusion

This study conducts an empirical study on the relationship between FDI and urban innovation output with two significant considerations. First, considering the south-north heterogeneity in China, we studied how the location of 70 large and medium-sized cities affects FDI and innovation output relationship. Second, the moderating effect of city leaders' traits, such as hometown, previous

working place, and overseas experience is considered in the models. The following conclusions were drawn from this study: 1) There is a positive impact of FDI on urban innovation output; 2) Compared with northern cities in China, the impact of FDI on urban innovation output is more significant and positive in southern cities; 3) Compared with cities where the leader has northern hometown, FDI significantly increases urban innovation output in cities where the leader has southern hometown. Compared with cities where the leader has a northern previous working place, FDI has significantly increased innovation output in cities where the leader has a southern previous working place. Compared with cities where the leader doesn't have overseas experience, FDI does not significantly increase urban innovation output in cities where the leader has overseas experience. It can provide certain practical implications for policy making and industrial development by taking into account the FDI and innovation connections.

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The Future of Sustainable Clothing Industry:

Reimagine, Regenerate and Close the Loop

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The Future of Sustainable Clothing Industry: Reimagine, Regenerate and Close the Loop

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Abstract

The COVID-19 pandemic has had sweeping repercussions in all industry sectors, including the textile and fashion industries. The pandemic not only posed challenges to various certainties of humanity but also demonstrate our ability to respond to serious health threats. The worldwide fashion industry has sadly witnessed both the environmental and social implications of resource overuse, environmental pollution, fast production cycles, unethical labor conditions, and waste generation. The epidemic is now giving a golden time to produce a sustainable and real renaissance of the industry. Interestingly, there is rising consumer attention to the environmental and social influence of fashion products, which has induced the exploration of a new marketplace for ethical and sustainable products. To what extent, what is the best approach moving forward? The answer could lie with sustainability in fashion design. Nevertheless, this is likely to be a complicated challenge as it needs to include various supply chain stakeholders. The aim of this article is to explore the effect of COVID-19 on the fashion industry, investigate the attitude and perceptions toward sustainable fashion of individuals who participated in fashion design, and address the key challenges in carrying out sustainable design practices after the outbreak of COVID-19. Data are collected through 10 semi-structured, in-depth interview questions. The key findings of the research point out that there is external (i.e. government support and consumer demands) and internal (i.e. at the corporate and individual levels) challenges to integrating sustainability into the fashion design process. Finally, policy implications and recommendations are provided constructive advice and valuable insights into fashion practitioners.

1. Introduction

The COVID-19 pandemic has been a worldwide pandemic for almost 3 years. A once-in-a-century COVID-19 pandemic has challenged so many of humanity's certainties. Lau et al. (2020) addressed that the COVID-19 outbreak has generated one of the vital disturbances experienced during the past 50 years and "breaking many global supply chains" (2020, pp. 127). However, businesses have shown that they are able to react to serious threats and can also turn COVID-19 into a great opportunity to create a real, anti-fragile, resilient, and sustainable renaissance. However, the challenge is so complex that it requires the involvement of many different stakeholders and implement low-carbon models from different production sectors. A single closed-loop supply chain can be reconfigured as a multi-loop system, in which both reused and recycled materials from a previous life cycle are reintroduced into the market as new products and values (D'Adamo and Lupi, 2021). This research focuses on the fashion industry, which unquestionably characterizes the lives of all citizens and identifies a potential circular premium.

This is a grim reality, but one could see this coming. The fashion industry has been on a trajectory of human rights violations and environmental degradation for quite some time now (Lau and Chan, 2021). The global fashion industry is the second highest user of water worldwide, generating 20 percent of global water waste and is responsible for 8.1 percent of greenhouse gases produced annually. That is a lot of damage, especially at a time when scientists and activists over the world are doing their best to avert the impending climate crisis (D'Adamo and Lupi, 2021). The COVID-19 crisis has only made it more obvious and brought the gross inequalities that persist in the labor market to the forefront. So now that we can no longer feign ignorance, what is the best way forward? The answer may lie in sustainability.

2. Fashion Industry in the COVID-19 Context

As lockdown continues in Europe, the US, Australasia, and much of Asia following suit, how is isolation affecting the fashion industry's design and manufacturing teams? What problem-solving solutions are being deployed? What will the impact on the next fashion collections be? We have a view on how they may be experienced (virtually, according to part one of this series), and in the latter part of this paper, insights from designers, software solution providers, manufacturers, and supply chain experts on how COVID-19 is affecting product design, development, and production, now and in the foreseeable future.

The coronavirus pandemic has sweeping repercussions on all sectors of the economy worldwide. However, the sectors that were extremely hard hit are the ones that come in the category of non-essential spending. Design apparel and footwear fall under this category. Over the last six months, COVID-19 has pummeled the US$2.5 trillion global fashion industry. With lockdown measures and unemployment on the rise, consumers have lost interest in buying clothes and shoes. McKinsey predicts that the sector will contract by up to 30% in 2021 vs 2020; the luxury market will be hit even harder, contracting by up to 39%. The majority of the global fashion supply chain has already been hurt, from the garment workers who have been laid off to designers stuck with piles of unsold inventory (D'Adamo and Lupi, 2021).

At the same time, however, many industry insiders believe that the pandemic could be a rare opportunity for the industry to reset itself. Designers are using this moment to start selling products online and connecting with customers directly. They are contemplating how to rebuild the supply chain in a more ethical, sustainable way, and to end the cycle of overconsumption and overproduction. The research embedded the Sustainable Development Goals (SDGs) by the United Nations (UN), specifically on SDG 12 – Responsible Consumption and Production (The United Nations, 2021).

3. Research Methodology

Data were gathered through semi-structured, in-depth, qualitative open-ended questions in 10 interviews. Through a qualitative research approach, the researchers can acquire a thorough understanding of the underlying effects of human behavior and social life in a natural environment. The study applied qualitative research to improve comprehension of the interpretation people attribute to events and actions and investigate the complex situation faced by researchers and industry practitioners (Habermas, 1972). The interview mainly covered the evolution of the business operation and the urgent demand for the sustainable product after the outbreak. The major findings of the research shows that there are internal (individual and company level) and external challenges (consumer needs and government support) to incorporating sustainability into the fashion design process. The interview questions are summarized below.

- *General Questions:*
  - Have you ever heard of sustainable fashion? What does it mean to you?
  - Have you ever applied any sustainable design strategies through the design process?
  - Where did you learn about sustainable design strategies? Training from company/ peer/ academic or self-learning?
  - After the outbreak of COVID-19, do you think sustainability become more important? And why?

- *Fashion Industry:*
  - Is there anything different in the fashion industry after the outbreak?
  - If there is any difference in the level of awareness of the Hong Kong fashion industry toward sustainable fashion?
  - If the company provides more training on sustainability?
  - If sustainability is integrated into the company's business strategy?
  - Is there anything different in the design process after the outbreak?
  - Comparing pre-COVID-19, are there any elements that you will pay more attention to or you have never applied to the design process before?
  - Will you be more considerate or focus on the following sustainable development goals?

- *Public:*
  - Comparing pre-COVID-19, do you think there's any difference in the level of awareness of Hong Kong society towards sustainable fashion?
  - Do you think consumers show higher acceptance on sustainable fashion product after the outbreak?

- Do you think consumers are willing to pay more for sustainable fashion products after the outbreak?

- *Academic:*
  - Have you learnt about sustainability during your fashion education?
  - If yes, do you think the sustainability knowledge that you learned from fashion education makes you want to participate more in this area?
  - Do you think sustainability education enhances your ability in the workplace?

- *Government:*
  - Comparing pre-COVID-19, do you think the Hong Kong government provides more adequate support toward sustainable fashion?
  - If the Hong Kong government promotes and educates sustainability the public efficiently after the outbreak.
  - If the Hong Kong government has an efficient plan for sustainable fashion and textiles after the outbreak?

10 design and technical-related fashion personnel have been invited to conduct the interviews. Their working experience has ranged from 10 to 35 years. As such, they are suitable for providing valuable insight into the study. In Table 1, we provide the profiles of the interviewees.

Table 1: Profiles of the Interviewees

Interviewee	The Nature of the Company	Position	Number of Working Years in the Fashion Industry
A	Fashion retailer	Design Manager	15
B	Fashion retailer	Founder	10
C	Textile trading	Design Manager	12
D	Textile trading	Designer	10
E	Fashion retailer	Technical Designer	12
F	Fashion retailer	Design Manager	20
G	Fashion retailer	Technical Designer	18
H	Fashion retailer	Technical Design Manager	20
I	Fashion retailer	Design Manager	16
J	Fashion retailer	Technical Design Manager	35

4. Discussion

In this section, content analysis was used to highlight the key research findings. The majority of the interviewees identified sustainable fashion as “fair trade production”, “eco-friendly materials and production”, “recycle” and “waste management”. Interestingly, Interviewee C highlighted that sustainable fashion depends on the standard of customers. Moreover, Interviewees B, H, and I pointed out that sustainable fashion is a key part of corporate social responsibility. 90% of interviewees indicated that they have applied sustainable design strategies through the design process like using stock fabric, classic, and timeless design style; designing on demand, custom

made, and up-cycle materials; searching low impact, recycling, regenerated materials; employing dying processes, and fair-trade factory; and paying attention on handcraft and workmanship.

In terms of learning about sustainable design strategies, there are various approaches were raised by the interviewees including the internet, competition, clients, in-house training programmes, industry associations, trade shows, and printed materials (e.g., professional magazines and newspapers). Nevertheless, most of the interviewees perceived that the idea of sustainability becomes a future trend due to community empowerment, government policy, customer expectations, and well-being.

After the outbreak COVID-19, most of the interviewees mentioned that there is a remarkable difference in the fashion industry. From the operational perspective, the operation has been stopped or operated very slowly. Fashion activities have been transformed from face-to-face to online mode. As such, the firms spent more effort to promote online marketing and develop an online business, so that firms can reach the customer under social distancing measures. From the fashion retailer's perspective, more brands are keen on sustainable design and using sustainable or responsible materials. Such sustainable design strategies became the trend, and they could also educate the customers. In this sense, customers look for minimal design, daywear, loungewear, and machine wash. They prefer to purchase durable fashion products rather than fast fashion. To this end, sustainability has been embedded in the business strategies of sizeable corporate. Such as the firms require the suppliers to join the system, implement carbon neutral policy, and publish the first Impact Agenda to outline their 5-10 years goal towards sustainability. Most of the interviewees focused on SDGs 8, 12, 14, and15. To a large extent, there is an increasing level of awareness in the Hong Kong fashion industry toward sustainable fashion.

According to the interview results, only 40% of interviewees expressed that the firm provides more training on sustainability. Indeed, Interviewee F shared that they have an information hub internally and shared with their vendors on the new initiatives of their firm's sustainability strategies. Clearly, the firms showed hesitation in the fashion market due to the COVID-19 pandemic. They prefer to "wait and see" how things go in the future. Some firms may face financial difficulties because of corporate restructuring or business closure.

Comparing pre-COVID-19, there is an increasing level of awareness in Hong Kong society towards sustainable fashion. In general, consumers show higher acceptance of sustainable fashion products and are willing to pay more for sustainable fashion products after the outbreak. This is promising for policymakers, government bodies, and industrial practitioners to promote sustainable fashion products to the public. However, all the interviewees expressed the government provides minimal support toward sustainable fashion, puts less effort to promote and educate sustainability the public efficiently, and introduces efficient plans towards sustainable fashion and textiles after the outbreak. In doing so, the government may need to take a leading role to collaborate with different stakeholders and industrial practitioners to strengthen Hong Kong as a regional fashion and textile trading centre in the Asia Pacific region.

Furthermore, most of the interviewees identified that they have a lack of knowledge relevant to sustainability during their fashion education. Specifically, a few of the interviewees did not go

through education in sustainability. But most of the interviewees argued that sustainability education enhances their abilities in the workplace. As suggested by Lau et al. (2018), professional development programmes improve employability and increase the substantial growth of industry creating improving productivity. To overcome the shortcomings, we propose that the concept of sustainability may incorporate into vocational training programmes and bachelor's degree programmes. Thus, higher education institutions may need to revamp existing programmes or subjects to cope with the changing demand and industrial standards.

5. Conclusion

The global fashion industry has bitterly evidenced the social and environmental implications associated with fast production cycles, overuse of resources, waste generation, environmental pollution, and unethical labour conditions. Growing consumer awareness regarding the social and environmental impacts of fashion products has led to the creation of a new marketplace for sustainable and ethical products. This paper highlights craft practices as one of the potential avenues for achieving sustainability within the fashion industry. Through a case study drawn from the handloom industry, this paper explores a manufacturing approach that is committed to fair-trade principles and designed to prevent waste. We argue that this study reveals a business model that could positively contribute towards generating employment opportunities and sustainable household income for the rural community. We conclude the paper by highlighting that this type of fair trade and environmentally conscious manufacturing process could address the three pillars of sustainability: social, economic, and environmental. The findings of the study invite manufacturers to revisit and redesign current fashion production systems, especially when waste and labor issues are hindering sustainability.

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Environmental Sustainability in the Fashion Industry

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Environmental Sustainability in the Fashion Industry

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Fast fashion comes at an astonishing environmental and social cost. While the impacts of the fashion industry in terms of pollution, water use and carbon emissions are increasing, the need for a shift to sustainable fashion is crucial. In this study, the environmental problems will be investigated in the fashion industry and the solution will be provided on the issue.

Introduction

Fast fashion is a trend in the fashion industry in recent years. The fashion industry responses to consumers fast impulse in buying clothes. Large amount of clothes were produced in a short period of time. Clothes are often affordable but in low quality so consumers have to buy clothes that but will be discarded very soon. On the other hand, fashion trends and styles change every season and people keep up with the latest fashion trends and buy the latest fashion clothes which leads to discard of old ones which were worn for a short period of time (Hirscher, Niinimäki, and Armstrong, 2018).

This leads to massive production of clothes and will be discarded by people. These clothes eventually end up in landfills or incinerators causing environmental pollution and degradation. Action has to be taken to solve environmental problems by discard of clothes, which include encouraging slow fashion, recycling of second-hand clothes, and increasing environmental awareness in consumers. In this way, sustainable fashion can be done to improve the situation of environmental degradation by textile wastes (Peters, Li, and Lenzen, 2021).

Environmental problems caused by the fashion industry -

Carbon footprint of clothes from fabric production, cloth manufacturing and transportation

Carbon footprint of fabric production and cloth manufacturing is high. At the global average, producing 1 tonne of cotton denim caused 23.2 tonnes CO_2e to release into the environment. This is because production process which involves spinning fibres and wetting uses lots of energy and steam (Zhao, *et al*, 2021).

The transportation of clothes among countries also contributes to the carbon footprint of the industry. China is one of the biggest exporters of carbon by exporting denim products to other countries in the past two decades. The carbon footprint of China from exporting clothes to other countries increased from 2.1 Mt CO_2e (14% of total carbon flows) in 2001 to 8.8 Mt CO_2e (55%) in 2018. India and Pakistan are the main exporters of carbon in the past two decades as well, while, Bangladesh and Southeast Asian countries are the largest importers of carbon in the past two decades. The transportation of clothes among countries increases the level of carbon dioxide in the atmosphere and affect the environment negatively (Zhao, *et al*, 2021).

Waste textiles in landfills polluting the environment

Lots of clothes were discarded by individuals and the fashion industry every year. According to the US Environmental Protection Agency (USEPA), approximated around 17 Mt of textile waste was found in municipal solid waste landfills, which ac5322222 counted for 5.8% of the total landfill. Fibres in textiles are often non-biodegradable and remain undecomposed in landfills. It releases carbon dioxide and methane to the environment and pollutes the soil (Rahman, Siddiqua, and Cherian, 2022).

The dye of textiles run to underground water when textile wastes are disposed in landfills. The dye of textiles is toxic and release harmful chemicals and heavy metals, such as naphthol, nitrate, copper, lead, mercury, arsenic, etc to underground water. The water then enters the ocean causing environmental threat to marine ecosystems (Rahman, Siddiqua, and Cherian, 2022). When waste polyester washed up to the ocean, it released large amount of microplastic fibres to the ocean. Microplastic fibres can bioaccumulate in marine organisms and eventually in human if we consume fish and other marine species (Ross, Chastain, and Vassilenko, 2021).

Water pollution

Large volumes of freshwater is used in the process of manufacturing clothes and

generate wastewater. This intensifies the freshwater scarcity problem. Wastewater generated from cloth manufacturing contains large amount of total suspended solids, chemical, effluents, and is high in alkalinity (Bailey, Basu, and Sharma, 2022). When this wastewater enters water bodies through sewage or landfill, it pollutes and enhance eutrophication in the water and harm livelihood of marine species. If marine species ingest or absorb these harmful chemicals, it negatively affects the behaviour and bodily functions of these species (Premaratne, *et al,* 2021).

Textile waste cause serious environmental problems and actions have to be taken to improve the situation. These actions include encouraging slow fashion, recycling waste textiles, and increasing environmental awareness in consumers. These actions lead to sustainable fashion and reduce negative impact the fashion industry has on the environment.

Solutions to sustainable fashion -

Encourage slow fashion

Slow fashion is opposite to fast-fashion and should be encouraged in the fashion market. Slow fashion means to lengthen the lifecycle of production and consumption of clothes. Slow fashion can be carried out by understanding what consumers value in buying clothes, such as functionality, locality, exclusivity, uniqueness, etc. Fashion companies can target these values to supply clothes to consumers. Consumers will wear the clothes for a longer time before discarding them. In this way, less waste will be generated (Jung and Jin, 2022).

Corporates should also perform tests to ensure the quality and durability of clothes and to avoid colour fading, pilling, and loss of dimension of clothes. Consumers do not have to dispose clothes that are worn out and less textile waste will end up in landfills and pollute the environment (Cooper and Claxton, 2022).

Recycle waste textiles

Corporates can recycle second-hand textiles by using them to make shoes or other products or to give them another lifecycle. A corporate in Australia recycled waste denim by grounding it into denim powder and dripping it into a solvent and spun it. The colour of the denim can remain on threads. These threads can be used in manufacturing new clothes. Some corporates in Brazil use 100% recycled cotton and polyester to produce wires and ropes which can be used in different industries (Arias-Meza, *et al*, 2022).

A study showed that waste cotton fabrics can be recycled into regenerated cellulous films using different solvents which are pre-treated with sulfuric acid hydrolysis. The waste cotton fabric was ground until no fabric pieces could be observed and was dissolved into the solvents. The solvents then go through the process of centrifugation, coagulation baths, washed with water and dried in room temperature, forming cellulous films. The films show better tensile strength and water barrier property than waste cotton fabrics. These films can be used in the biomedicine and packaging industry, and in manufacturing of electronic devices (Wang, Huang, and Wang, 2022).

These examples show that waste textiles can be recycled into useful products that can be used in other industries. This reduce the amount of textile waste accumulated in landfills and water bodies and pollution to the environment.

Increase consumer's awareness on sustainable fashion

Moreover, Government and non-Government sectors should increase the environmental and social awareness of consumers and help consumers understand the impact of textile waste on the environment and social impact of overproduction of clothes on labour. Consumers will think carefully before buying clothes and to avoid disposing them very soon (Greg Peters, Mengyu Li, and Manfred Lenzen, 2021). They may choose to buy products from corporates that have social responsibility and do not exploit labours during the manufacturing of clothes and hold environmental standards when manufacturing clothes. Consumers may buy green products that have little to no negative environmental impacts during the production of the product from these corporates. In this way, corporates value environmental and social responsibility and upholding environmental standards in production of their clothes. This lead to sustainable fashion as corporates uphold environmental integrity and social responsibility when manufacturing clothes and consumers dispose less clothes (Lira, *et al*, 2022).

Conclusion

In conclusion, sustainable fashion is a solution to reduce the negative environmental impacts caused by the production process and disposal of textiles. Sustainable fashion can be done by lengthening the lifecycle of textile from production to consumption, recycling of textiles by corporates, and increasing environmental awareness of consumers.

It is important to find different ways to achieve sustainability in the fashion industry because clothes made from the industry are daily necessities for people. If fashion

corporates and consumers cooperate, the fashion industry can become more sustainable and reduce negative environmental impact textile waste has on the environment. People can live in a better environment and will treasure the clothes that they buy.

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The Dynamic Process of Post-merger Integration and Innovation in the Context of Reverse-M&As: The Transformation of Complementarity & Compatibility, Knowledge Management, and Trust Building

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Extended Abstract

Mergers & Acquisitions (M&A) is a critical way for emerging market multinationals (EMNEs) to source strategic assets, overcome the "liability of emergingness" (LOE), and improve innovation. Despite increasing academic attention to PMI, the understanding of its *process* and *mechanisms* remains insufficient, especially for the M&As conducted by EMNEs that acquire firms from *advanced markets* (termed as *reverse M&As* in the paper). Through a multi-case study, we illustrate the holistic PMI process by identifying mechanisms including the *dynamic transformation of complementarity & compatibility*, *trust building*, and *knowledge management*. We further propose trust building and knowledge management as the alleviation of LOE.

Keyword: EMNEs; Mergers & Acquisitions; Post-Merger Integration; Multiple Case Studies

1. Introduction

Cross-border M&As conducted by the emerging market multinationals (EMNEs) have grown rapidly and attracted increasing academic attention in recent years (Madhok & Keyhani, 2012), especially for the ones that enter into the developed market. Such acquisitions constitute a special branch of cross-border M&As under the term of *reverse M&As (RM&As)* following previous studies (e.g., Sun, 2018; Sun & Zhao, 2020) to denote a deal of which the *acquirers are from the emerging markets* and the *targets are from advanced markets*. RM&As provide the innovation research with a unique context by differing from other forms of cross-border M&As (i.e., the ones conducted by advanced multinationals and the ones conducted by EMNEs in other emerging markets) in following aspects. Firstly, while the cross-border M&As conducted by most advanced market multinationals (AMNEs) aim to exploit their existing stock of resources, RM&As are often motivated by the springboarding intention to access the strategic assets (Luo & Tung, 2007, 2018), overcome the latecomer status (Madhok & Keyhani, 2012) and accelerate

technological catchup to better compete in the global market (Li, Prashantham, Zhou, & Zhou, 2021). Secondly, RM&As involve firms from two "sides" of the world and the economic, institutional and cultural distances between one emerging market and one developed market are simply greater than the distance between two emerging markets (or two developed markets), producing larger barriers for communication, mutual understanding and consequent knowledge transfer for innovation during post-merger integration (PMI) (Petti, Spigarelli, Lv, & Biggeri, 2021; Zhang & Yang, 2021). Thirdly, strong absorptive capacity is required to understand, assimilate and apply the acquired knowledge; however, such high-level absorptive capacity can go beyond the grasp of EMNEs, leading to obstacles of integration (Liu & Woywode, 2013). Last but not least, emerging market acquirers could be *perceived* negatively by the upmarket targets even if they possess proper capabilities due to the transference of an imperfect national image as having poorer economic and institutional status, such negative perception brings additional legitimacy issues to the RM&A deal completion and the PMI (Liu & Woywode, 2013). The third and fourth differences also constitute what is termed as the "liability of emergingness" (LOE) by Madhok and Keyhani (2012: 28), which denotes the extra disadvantages coming from the fact of being an emerging market company. Moreover, the geopolitical tension between US and China, which then grow into a deglobalization trend (Peng, Kathuria, Viana, & Lima, 2021), further intensifies the difficulty for EMNEs to conduct PMI with the targets from advanced markets. Hence, RM&As suffer from more challenges during the PMI process compared with other types of cross-border M&As, necessitating further research on how EMNEs could overcome such challenges and accomplish technological catch up and business upgrading. Furthermore, in the limited papers that study the PMI and post-merger innovation of RM&As, the focus is on the outcome instead of the *process and mechanisms* of achieving it. In this vein, this paper aims to answer the following research question:

> *How could EMNEs overcome the LOE to successfully conduct PMI and innovation upgrading in the context of RM&As*?

By exploring the "how" question, this paper focuses on the longitudinal process and associated mechanisms and makes following contributions. Overall, it responds to the calls to open the black box of

PMI by embracing its processual nature (Graebner, Heimeriks, Huy, & Vaara, 2017). This paper identifies various interactive mechanisms (i.e., complementarity & compatibility, trust building, and knowledge management) along different stages of PMI, and their changing effects on two types of post-merger innovation, namely exploitative innovation and exploratory innovation. By doing so, it contributes to three research areas. First, it enriches the literature of complementarity and compatibility by uncovering their dynamic nature against the normally static view and revealing the facilitators that drive their transformation (i.e., trust building and knowledge management). Second, it enriches our understanding of springboarding perspective and LOE via exploring how firms could successfully catch up after taking the leap to integrate the acquired resources, overcome the LOE and achieve innovation upgrading. Specifically, this paper proposes trust building and knowledge management as the mechanisms to overcome LOE from the socio-organizational perspective and technological perspective. Third, it contributes to the post-merger innovation literature by stressing the differentiation between exploitative innovation and exploratory innovation to guide resource allocation and innovation strategy formulation.

2. Theoretical Background – Post-merger Integration, Innovation and Research Gaps

Most PMI studies pay attention to the influences of the simplified integration level (i.e., high-low; high-moderate-low) which mainly concerns the extent of acquirer control and target autonomy on post-merger innovation (Liang et al., 2021). Such emphasis on the simplified PMI level easily leads to the absent complicated, dynamic and processual nature of PMI. Several papers select the certain aspects of PMI and analyze their influences on innovation such as cultural integration and technological integration (Liang et al., 2021). Therefore, the black box of PMI where its processual and multidimensional nature are stored needs to be further explored (see Graebner et al., 2017). Besides the overlooked process of PMI, innovation research suffers from limitations by treating innovation as a homogenous term via patent-related measures. Hence, the heterogeneity inside the word ‘innovation’ is largely ignored (Li & Gao, 2017). Moreover, studies tend to focus on innovation elements (i.e., innovation input, influencers, and output), instead of the holistic process. Furthermore, the springboarding perspective has not clearly illustrated what occurs after EMNEs taking the leap and how LOE could be alleviated (Luo & Tung, 2018;

Madhok & Keyhani, 2012). In sum, major research gaps include the neglected process of PMI, the undifferentiated innovation, and the insufficient illustration of post-springboarding activities.

3. Method

Multi-case study method is adopted as it is suitable to answer the 'how' question of a sophisticated phenomenon within the real-life context with its potential to capture deep insights and provide rich descriptions (Eisenhardt & Graebner, 2007). Multiple cases are selected over single case as it permits us to compare and contrast the findings across different cases to generate more robust findings (Eisenhardt, 1989). The research context is Chinese MNEs that conducted RM&As in Germany, Japan, Korea, and USA (table 1), which is selected based on theoretical sampling (Glaser & Strauss, 2017). The primary data source is 10 semi-structured interviews with supplementary secondary data such as annual reports and news. Interviewees are from the management team that directly involves in the RM&As to ensure their knowledge of research topic. Thematic analysis by individual authors and team discussion is adopted to identify themes and patterns.

Table 1 Sample description

	A	B	C	D	E
Acquirer Origin	China	China	China	China	China
No. of Deals	2	1	1	1	1
Origin of Targets	Japan, Korea	Germany	USA	USA	Germany
Completion Date	2013; 2008	2012	2016	2019	2015
Industry	Optical lens	Hydraulic pump	White good	Sportswear	Medal wire
No. of Interviews	1	3	3	2	1
No. of Participants	1	3	2	2	1
Position of Participants	Executive Vice President	CEO; Director of Investment & Global Strategy	CEO; Director of Strategy	CEO; Director of Public Relation	CEO

4. Findings

Findings (figure 1) reveal two mechanisms that enabled and enhanced PMI and post-merger innovation, namely *complementarity & compatibility (C&C)*, and their *dynamic transformation* along with the factors that facilitated this evolution, i.e., *knowledge management & trust building*. Additionally, two types of innovation, namely *exploitative innovation* and *exploratory innovation* were identified with different conditions and stages to achieve them. To be more specific, knowledge management, and knowledge co-

creation in particular, were found to shift the base of complementarity from the *existing stock of resources* at the early stage to the *newly created resources* at the later stage. Trust building was found to contribute to the transformation of compatibility from the *industry relatedness-based* one at the early stage to the *organizational routine-based* one at the later stage. Also, while initially perceived C&C lead to the early-stage cooperation, strategic integration, and the exploitative innovation, it was the transformed basis of complementarity and compatibility lead to deeper collaboration, functional integration, and exploratory innovation.

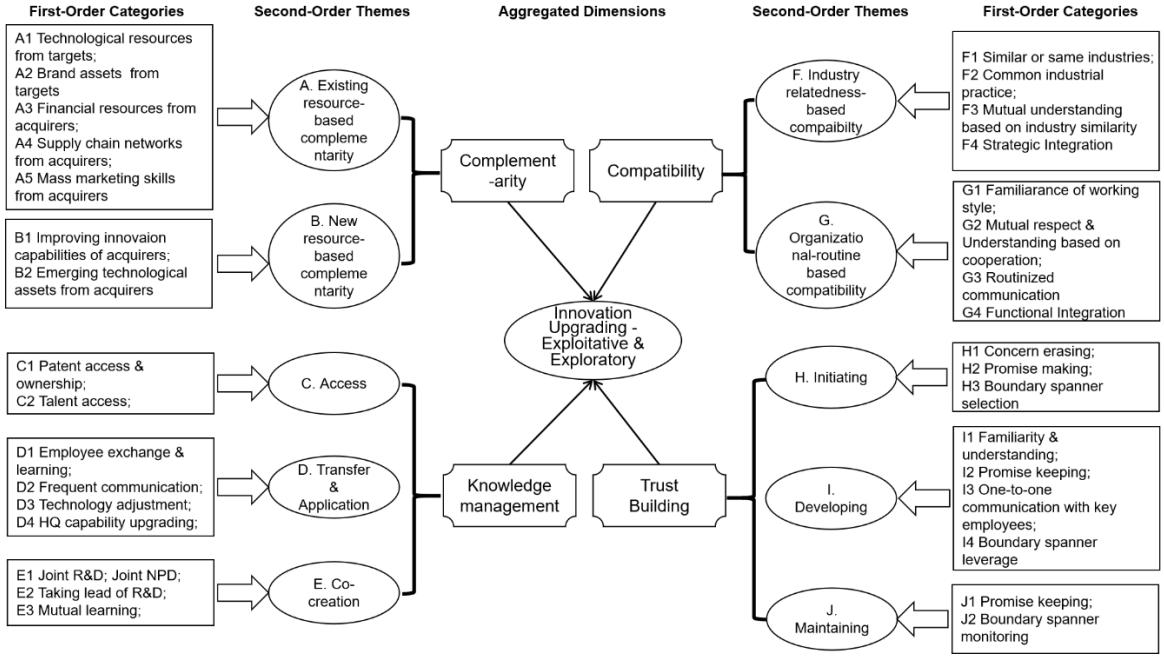

Figure 1 Data Structure

5. Discussion

A theoretical model (Figure 2) is generated to illustrate the process of PMI and post-merger innovation for RM&As. The figure delineates the transformation of complementarity (from being based on existing resources to being based on new resources) and compatibility (from being based on industry relatedness to being based on organizational routine) and how it is achieved with the support from knowledge management and trust building. In this process, knowledge management is found to reduce LOE from the technological perspective and to advance the evolution of complementarity; trust building is found to alleviate LOE from the socio-organizational perspective and to advance the evolution of compatibility. They ultimately contribute to exploitative innovation at the early stage and exploratory innovation at the

later stage.

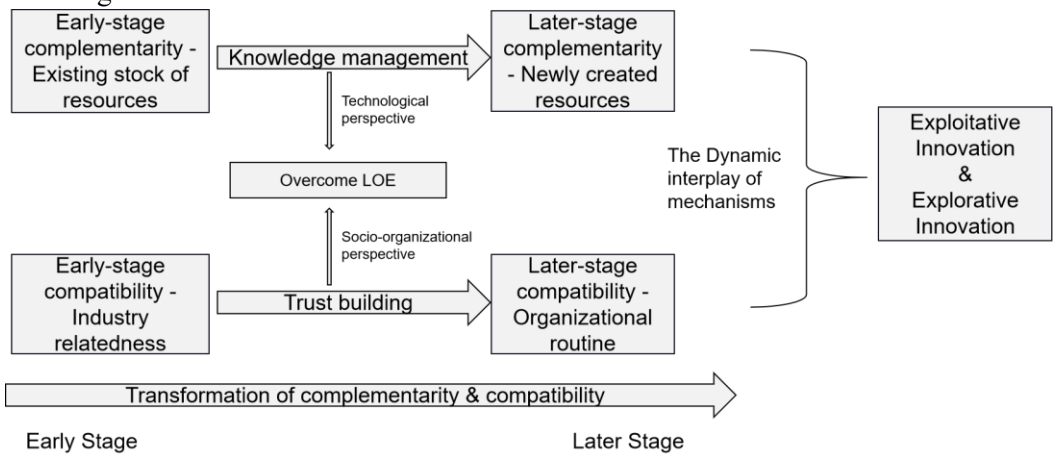

Figure 2 Theoretical model: Compatibility, complementarity and innovation during PMI

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Need for Cognitive Closure:

Performance Feedback and Corporate Environmental Initiative

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Need for cognitive closure: Performance feedback and corporate environmental initiative

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Extended abstract

Performance as an effective referent point facilitates corporate decision makers to evaluate and to coordinate their strategies and behavior. In contrast to prior research, firms in general encounter ambiguous signals from performances in practices. We highlight organizational psychological and behavioral dynamic under ambiguous contexts. In this study, we argue that firms become anxious, exhausted, and panic as performance feedback is inconsistent or ambiguous. In turn, they pursue overly corporate environmental initiative as breakthrough to deviate from such ambiguous contexts. We employ a panel dataset of 2,911 Chinese firms to explore the relationship between performance feedback ambiguity and an involvement in corporate environmental initiative. Our findings show that as performance feedback become ambiguous, firms are more likely to be engaged in corporate environmental initiative. Such tendency is weakened when state ownership is high; when slack resource is abundant. We provide a more elaborated and practical framework for organizational response and adaption to ambiguous contexts.

Keywords: Corporate environmental initiative, performance feedback, breakthrough, tolerance of ambiguity, need for cognitive closure, China

1. Introduction

Now days, firms or corporate decision makers feel a strong need to examine and update their strategies and business portfolios under hyper-competition and rapidly changing environments. Performance feedback that offers explicit and direct evaluation for business facilitates corporate executives to check and improve it (Baum & Dahlin, 2007). Ambiguous signals from performance put firms on difficult status. Inconsistent or ambiguous performance feedback engenders organizational confusion, exhausting, and anxiety (Kim et al., 2015). Because individuals or organizations analyze ambiguity in diverse-and creative-ways, they are confused (Burmeister et al., 2022). Building on the concept of cognitive capability, firms cannot help allocating more managerial attention to processing a

lot of information regarding ambiguous signals (Gatignon & Capron, 2021). Firms are exhausted in such process. Psychologically, confusion and being exhausted resulting from the ambiguity may be a key cause of organizational anxiety.

We expect that: (1) as firms encounter ambiguous performance feedback, they process information regarding to it, maintaining a status-quo; (2) corporate executives identify and clarify ambiguous signals into known and unknown one; (3) they consider and devise corporate activities to earn definite conclusion regarding ambiguity, based on processed information; (4) companies conduct a corporate initiative, which not only offers clues to resolve corporate problems but also act as effective momentum to approach to ambiguity in new ways.

In this study, we posit that corporate environmental initiative as an effective breakthrough to enable firms to overcome ambiguous situations (Dupire & M'Zali, 2018). First, engaging in corporate environmental initiative provides effective clues to firms to deviate from ambiguous contexts. Second, the pursuit of environmentally friendly policy acts as momentum to accelerate organizational transition in response to ambiguous signals from performance.

We develop a framework to investigate organizational response and adaption to ambiguous performance feedback. By highlight organizational psychological and behavioral dynamics, this study investigate more deeply how and why firms employ corporate environmental initiative as an effective strategic instrument that offers clues and acts as organizational momentums, to respond and to adapt to ambiguity. To empirically test our theory, we employed a panel set of Chinese firms publicly listed on Shanghai and Shenzhen Stock Exchange from 2009 to 2018 years.

2. Literature review and hypotheses

2.1 Performance feedback ambiguity and corporate environmental initiative

On the strategic dimension, because corporate greening is involved in improving and restructuring comprehensive and fundamental business process, firms cannot help re-examining each step of business, including strategy shaping, manufacturing process, marketing approaches, and so on, and key elements in operating firms, such as, industrial status, consumers, NGOs, communities, and institutional arrangements. The pursuit of corporate environmental initiative break entrenched

interest-balance among key stakeholders, including labor union and tenured managers.

On the organizational psychological dimension, an engagement in corporate environmental initiative alleviates organizational anxiety and confusion that result from ambiguous performance feedback. Under ambiguous contexts, companies may tend to excessively perceive environmental riskiness, and also overly view a strategic benefit of corporate greening rather than its penalties in accordance with psychological literature. Jacquart and Antonakis (2015) asserted that people tend to support leaders who adopt extreme approach in uncertain contexts. In line with this reasoning, we propose that the following hypothesis;

Hypothesis 1. As performance feedback become more ambiguous, a firm is more likely to be engaged in corporate environmental initiative.

2.2 Slack resource as buffer

Slack resource reinforces managerial tendency, which wait and view ambiguous contexts (Deisenhammer et al., 2020). In general, dealing with ambiguity is annoying and difficult (Greve, 1998). Because ambiguity engenders organizational panic and anxiety by threatening its survival, corporate decision-making may be based on emotional (or irrational) judgment. Slack acts as an effective buffer that ensures organizational security; mitigates organizational confusion. Firms with great slack resources are more likely to persistently view ambiguity and to address it relative to firms with less slack resources (Kuusela et al., 2017). In contrast, firms with less slack resources relatively feel more anxiety under ambiguous performance feedback. Accordingly, we propose the following hypothesis;

Hypothesis 2. The relationship between performance feedback ambiguity and corporate environmental initiative becomes weakened when firms have more slack resources than when they have less slack resource.

2.3 State ownership and need for cognitive closure

When Chinese state holds a high ratio of a firm's share, the firm makes sure the odds of organizational survival even under severe competition and significant threats. This may be because state ownership represents potential support for a firm' operation (Gatignon & Capron, 2020); it significantly strengthens organizational psychological stability. In the case of encountering ambiguity, a firm with high state ownership is more likely to persistently view it than a firm with less state ownership. In turn,

we argue that a firm that state ownership is high tends to maintain a status-quo instead of taking proactive actions. Therefore, we propose the following hypothesis;

Hypothesis 3. The relationship between performance feedback ambiguity and corporate environmental initiative becomes weakened when state ownership is higher than it is lower.

2.4 Industrial competition and ambiguity tolerance

In competitive industries, the mitigating effect of slack on needing for cognitive closure may be weakened. Encountering competitive pressure, firms or corporate executives move their emphasis from maintaining a status-quo toward strengthening corporate competitiveness and innovativeness (Connelly et al., 2020). Firms are more likely to employ corporate environmental initiative to conduct problemistic search and to create organizational momentum than they operating in less competitive industries.

On the resource-utilization dimension, reinforced firms' motivation makes them to allocate slack resource to being involved in both problemistic search and managerial entrenchment alleviation rather than ensuring a organizational sense of stability. When operating in relatively less competitive industries, firms tend to hold slack resources as an effective buffer for ambiguous contexts or potential corporate problems, waiting and seeing situations instead of conducting any corporate initiative. With severe competitive pressure, firms put their emphasis on responding and adapting to such threats. Therefore, we propose the following hypothesis;

Hypothesis 4. The moderating effect of slack on the relationship between performance feedback ambiguity and environmental initiative becomes weakened when industrial competition is higher than it is lower.

In the case of operating in competitive industries, firms are more motivated to conduct corporate environmental initiative, which act as both information (or problemistic) search and organizational momentum to deviate from such situation. Firms are more likely to extract strategic benefits, including getting access to key resources, by effectively employing their state ownership to deal with competitive pressure rather than waiting and seeing ambiguous signals. Accordingly, we expect that;

Hypothesis 5. The moderating effect of state ownership on the relationship between performance feedback ambiguity and environmental initiative becomes weakened when industrial competition is higher than it is lower.

3. Method and results

3.1 Method

Our data source includes the China Stock Market and Accounting Research (CSMAR) database, the Chinese Research Data Service Platform (CNRDS, https://www.cnrds.com), and China Environment Yearbooks. Our sample consists of companies publicly listed on the Shanghai and Shenzhen Stock Exchange in China from 2009 to 2018 years.

Dependent variable. According to Sun et al. (2019), we measured corporate environmental initiative (CEI) by employing CNRDS index.

Independent variable. Following to Josepth and Gaba's (2015) study, we employed 5-years window rolling correlation of a firm's performance relative to two distinct performance referent point.

Moderating variable. Slack is computed as (1) total liabilities were detracted from total asset; (2) it is weighted by total assets. *State ownership*. State ownership is measured by the ratio of the numbers of shares hold by governments to the total numbers of shares issued. *Industrial competition* (*HHI* index), which is computed by the sum of squares of market shares of all firms at the 3-digt industrial level in a given year.

TABLE 1 Impact of performance feedback ambiguity on corporate environmental initiative

VARIABLES	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Performance feedback ambiguity (PFA) **(H1)**	-0.135**	-0.208***	-0.180***	-0.193***	-0.180***	-0.240***
	(0.0639)	(0.0706)	(0.0668)	(0.0720)	(0.0669)	(0.0753)
PFA*Slack **(H2)**		0.233***		0.234**		0.236**
		(0.0892)		(0.112)		(0.113)
PFA*State ownership **(H3)**			1.086**		1.226**	1.263*
			(0.514)		(0.622)	(0.645)
PFA*HHI				-0.132	0.000845	-0.127
				(0.0844)	(0.00701)	(0.0860)
Slack*HHI				-0.257		-0.253
				(0.262)		(0.265)
State ownership*HHI					1.196	1.033
					(1.466)	(1.545)
PFA*Slack*HHI **(H4)**				-0.000902		0.0143
				(0.341)		(0.347)
PFA*State ownership*HHI **(H5)**					-1.325	-1.369
					(2.266)	(2.424)
Moderator	yes	yes	yes	yes	yes	yes
Controls	yes	yes	yes	yes	yes	yes
Year and industry dummies	yes	yes	yes	yes	yes	yes
Observations	2,911	2,911	2,911	2,911	2,911	2,911
R-squared	0.105	0.107	0.106	0.107	0.106	0.109

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

3.2 Result

The result shows that performance feedback ambiguity is significantly and negatively associated with CER (β = -0.135, $\rho \leq$ 0.05); Slack resource moderates significantly and positively the relationship

between two (β = 0.233, $\rho \leq$ 0.01); State ownership moderate significantly and positively the relationship between performance feedback ambiguity and CEI (β = 1.806, $\rho \leq$ 0.05); Industrial competition (HHI) alleviates the mitigating effect of slack and state ownership on ambiguous performance feedback, but these are not significant at the 10 percent level

4. Conclusion

We highlights organizational response and adaption to performance feedback ambiguity based on "need for cognitive closure" perspective. This study develops a framework that how and why firms encountering ambiguous signals from performance feedback contribute more aggressively to corporate environmental initiative than firms facing relatively less ambiguous performance feedback. We advance the behavioral theory of firms by investigating the relationship between performance feedback ambiguity and the pursuit of environmentally friendly policy.

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Paper Number: MS0117

Siphon Effect of State Equity in Internationalization under the Belt And Road Initiative

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Siphon Effect of State Equity in Internationalization under the Belt and Road Initiative

Abstract

While the Uppsala model has been widely accepted such that firms expand from destinations at close distances, companies from emerging economies have not followed such an evolutionary trajectory. This is especially true under the Belt and Road Initiative (BRI) theme such that private enterprises take bold expansions into those risky BRI destinations and create a theoretical puzzle of what determines the geographic location of international expansions. Invoked on the resource dependence theory (RDT), we propose that state equity invested in the host country generates a siphon effect as it constitutes an important resource that can be depended on for private enterprises and thus attracts more private investments. Such inclination becomes stronger in countries that have greater institutional distance and with frequent regime changes. Based on a panel dataset that covers China's private investments along the BRI routes, we found strong support for our hypotheses. Overall, this study contributes to the international business literature by unveiling that state equity serves as an important precursory of the internationalization of private enterprises and such inclination becomes stronger in destinations with higher risks.

Keywords: state equity, private enterprises, internationalization, siphon effect, Belt and Road Initiative

What determines the geographic location of organizational international expansions? Premised on the assumption that firms cannot circumvent the liability of foreignness caused by cultural unfamiliarity

(Li, Liu & Qian, 2019b), previous literature has generally conceived that firms internationalize evolutionarily, starting from closet locations to those far away and moving from direct trades to international production (Johnson & Vahlne, 2009; 1977).

While distance is an undoubtedly critical factor (Li, Xia, and Lin, 2018; Liu & Wang, 2019; Qian, Liu, and Wang, 2018), studies have reported that more firms are adopting a global operation since their establishments or do not follow a chain-like style of internationalization (Oviatt & McDougal, 1994; Prashantham & Floyd, 2019), which is in contrast to the stage model postulated by the Uppsala school. Consequently, Li and his associates (2019a) argue that it is crucial to go beyond the distance aspect and consider other factors like the roles of the same ethnic community in the hosting institution to explicate those quick international expansions.

The understanding of the underlying facilitators of those quick internationalization becomes even more ambiguous but urgent under the ambitious Belt and Road Initiative (BRI) called by China in 2013. Initiated by the government-led infrastructure projects that intend to connect most emerging economies across Eurasia (Liu & Wang, 2022), the BRI constitutes a unique new trade route for rapid and tremendous cross-border business activities that only allows limited time for entrepreneurial planning and learning (Li et al., 2019b). As such, private participatory enterprises in general have to confront even more unfamiliar and risky institutions, except for potential support from previous governmental projects (Wang & Liu, 2022). Against this backdrop, we ask *whether earlier government equities in the hosting destination facilitate more private investments under the BRI theme* and *when are government equities more valuable in helping those private followers*?

We deem resource dependence theory (RDT) may be appropriate to answer those two key questions. Specifically, RDT proposes that organizational survivability and performance rely on

contingencies in the external environment (Hillman, Withers & Collins, 2009; Pfeffer & Salancik, 1978). Investments made under the BRI are primarily focused on countries that are rife with political instabilities and lack immigrant community support, as opposed to those in developed Western regions (Clover & Hornby, 2015; Li et al., 2019b). Under this scenario, we suspect that government equities may constitute a critical resource for private enterprises such that the appearance of state equities in a BRI destination engenders a siphon effect that alleviates the entrepreneurs' deficiency in informal institutional supports and fear of formal institutional risks. Such dependence on the actions of previous governments should be more potent when the institutional distance between the paired countries is greater and when the host government has frequent regime changes, which both make private enterprises more dependent on government equities. We found strong support for our hypotheses by integrating country-level data from World Bank with firm-level data from China Stock Market and Accounting Research Database (CSMAR) between 2013 and 2020, where 2013 marks the beginning of BRI.

Overall, the study makes three contributions to the international business (IB) literature. First, we heed the calls for more investigations into the effect of state capitalism under the BRI theme (Liu & Wang, 2022), given that state equity plays a precursory and pivotal role not only in this grand initiative but also in many economies (Li et al., 2019b). Our identified siphon effect suggests that earlier state investment under the BRI theme serves as a conducive flagship, comforting the risk concerns and learning needs among private investors. This in turn challenges the one-sided criticisms toward state capital in international business activities (e.g., Li et al., 2018); instead, they prosper a healthy economic growth in the hosting countries. Second, we enrich the understanding of the antecedents of international expansions that do not follow a chain-like style. Particularly, we unveil

that state equities function as another buffering and dependent resource that facilitates internationalization even if ethnic communities are rather absent in the host country (c.f., Li et al., 2019a). That is, private enterprises could obtain valuable and dependent resources via the third-party of state equities even if they cannot physically absorb the uncertainties. In other words, following the state equities in those uncertain BRI-covered nations create a virtual joint fleet or geese herd, which pacifies the risks and learning efforts for individual entrepreneurs to cope with those unfamiliar environments and governments. Third, the study further portrays the theoretical boundary of the siphon effect of state equity such that the facilitating effects of state equity become stronger under greater institutional uncertainties. Those moderating effects in turn further precipitate our proposition that there exist more factors intertwined together to predict organizational internationalization.

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Paper Number: MS0118

Segmentation of Malaysian Girls by Gender Roles and its Influence on Shopping Orientations

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Segmentation of Malaysian girls by gender roles and its influence on shopping orientations

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Extended Abstract

A survey was conducted to segment the Malaysian girls' market based on their ideal female gender roles and identities. A convenience sample of 243 female secondary school students aged 13 to 19 were asked to answer 36 questions about gender roles and identities developed from a previous study among Hong Kong girls. A series of factor analysis generated a six-factor solution. Four distinct clusters of respondents were identified and profiled. They were named as Civic intellectuals, Presentable intellectuals, Career-oriented, and Family-oriented. The Civic intellectuals cluster accounted for the largest proportion of the sample while the Family-oriented cluster accounted for the smallest proportion. Shopping orientations differed significantly among the four clusters. The findings can inform marketers in designing effective retail and other marketing strategies that target the adolescent girls' market.

Keyword: market segmentation, young consumers, shopping orientations, cluster analysis

1. Introduction

Females are an important market because they often buy for their families as well as for themselves. As women in Asia are generating income through higher labor participation and moving into higher income occupations, they are of obvious importance to marketers (Tonby et al., 2021). Female consumers' motivation for consumption can be different significantly from their male counterparts. For example, a study among Chinese Gen Y consumers found that female respondents travel abroad mainly to gain "face" while male respondents travel abroad mainly to avoid losing "face" (Long & Aziz, 2021). Marketing and advertising professionals strive to keep up-to-date about females' changing values and roles in society (Chan & Ng, 2012). The rising purchasing power of the

new middle-class women in emerging markets has prompt studies on the impact of gender roles on self-expression and construction of self-identity through consumption behaviors (Rangwala et al., 2020). In the current study, ideal gender roles and gender identities were used as psychological variables for generating different market segments among adolescent girls in Malaysia. The influence of gender roles and gender identities on shopping orientations was discussed.

2. Method

A convenience sample of 314 female secondary school students were recruited from a high school were invited to fill in an online questionnaire. Informed content was obtained from the respondents before data collection. Three cases were removed as about half of the items were missing. Univariate outliers were identified. Sixty-eight cases with *z*-scores three or more standard deviations above and below the mean for at least one item were excluded. The remaining sample size was 243.

The initial version of the Female Gender Roles and Identities Scale (FGRI) included 36 statements about gender roles and identities. These statements were generated from a qualitative study of perception of gender roles and gender identities of adolescent girls. These statements included themes of females' appearances, personalities, work, families, interests, and health concerns. Participants were asked to rate these statements on a five-point scale from 1 (*strongly disagree*) to 5 (*strongly agree*).

3. Results

Exploratory factor analysis

Exploratory factor analysis was conducted to explore the possible underlying factor structure of the 36 FGRI items. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.73 and Bartlett's test of sphericity was significant, $p < 0.001$. It was appropriate to conduct factor analysis. A principal component factor analysis using varimax rotation was performed on the 36 FGRI items. After three rounds of factor analysis, six factors with eigenvalues greater than one were extracted. The final version of a six-factor solution consisted of 31-item scale, accounting for 58 percent of the total variance.

Factor 1, Marriage and child-bearing ($\alpha = 0.82$), consisted of eight items and accounted for 13.95 percent of the variance. It was named to reflect the aspiration for marriage and having children. Factor 2, individualistic ($\alpha = 0.80$), consisted of five items and explained 10.02 percent of the variance. It was named on the basis of the aspiration of females to pursue dreams and express own opinions. Factor 3, home-making ($\alpha = 0.72$), included five items and explained 9.80 percent of variance. It was named on the role of female in a household. Factor 4, intellectual ($\alpha = 0.74$), had 4 items and accounted for 9.03 percent of variance. The emphasis of this factor is on a knowledgeable female role. Factor 5, volunteering and success ($\alpha = 0.65$), consisted of 5 items and explained 8.83 percent of the variance. It represents the female's role in community and career. Factor 6, public image ($\alpha = 0.61$), included 4 items and explained 6.39 percent of variance. It was named to represent the pursuit of physical beauty.

Cluster analysis was used to explore the different segments of gender roles and identities measured by the FGRI subscales. Hierarchical cluster analysis with Ward's clustering method was used. Cluster solution and centroid estimates were complied. From alternative analyses with three to seven clusters, a four-cluster solution was selected due to the appropriateness for the data.

A one-way ANOVA was conducted among the four clusters. These four groups were labelled as Civic intellectuals, Presentable intellectuals, Career-oriented, and Family-oriented. Civic intellectuals had the largest members ($n = 112$). This group was characterized by the highest scores on volunteering and success, as well as intellectual factor. Presentable intellectuals were the second largest group ($n = 69$). This group had the highest scores for individualistic, intellectual, and public image. Career-oriented ($n = 47$) was characterized by the lowest scores for marriage and child-bearing, as well as home-making factors. The last cluster, Family-oriented, had the smallest members ($n = 15$). This cluster was characterized by the highest scores for marriage and child-bearing, as well as for home-making factors. They also scored low for intellectual as well as volunteering and success factors.

ANOVA tests are conducted to examine if there are differences in shopping orientations among respondents in the four clusters. Results demonstrated that the four clusters varied significantly in all three shopping orientation factors ($p<0.001$). The Presentable intellectuals were most likely to be recreational shoppers or social shoppers. They were less likely to be utilitarian shoppers. The

Family-oriented cluster were most likely to be recreational shoppers and were least likely to be utilitarian shoppers. The Career-oriented cluster were least likely to be recreational shoppers. The Civic intellectuals were most likely to be utilitarian shoppers.

4. Conclusion

The presence of four sizable clusters (Civic intellectuals, Presentable intellectuals, Career-oriented, and Family-oriented) across Malaysian samples demonstrates that the conceptualization and construction of gender identities has evolved beyond traditional role definitions. Individuals can deploy Civic intellectuals, Presentable intellectuals, Career-oriented, and Family-oriented as facets of identity when deriving a sense of ideal self, as identified by the emerging literature on consumer sexual orientation dynamics (Eisend & Hermann, 2019).

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Paper Number: MS0119

Revisiting "The Role of Internationalization in Enhancing the Innovation Performance of Chinese EMNEs": A Replication and Extension

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Revisiting "The role of internationalization in enhancing the innovation performance of Chinese EMNEs": A replication and extension

Abstract

Prior research has paid limited attention to the effect of internationalization path on the innovation performance of MNEs. Elia, Kafouros and Buckley (2020) build upon the geographic relational approach to explore the relationship what has significant implications for emerging economy MNEs (EMNEs). In the empirical setting of Chinese EMNEs, they find that the extent of cross-border M&As, the diversity of total outward FDIs, and the concentration in emerging markets are is positively associated with firm innovation performance. This suggests that a viable internationalization strategy for EMNEs should focus more on cross-border acquisitions, increase diversification across the globe, and target emerging economies over time. Considering the theoretical and practical importance of the results, we decide to replicate and extend their analyses based on more recent data. While our study confirms some of Elia et al.'s (2020) important findings, it makes complementary contributions

Keywords: Replication, internationalization path, institutional distance, cultural distance, innovation performance, EMNEs

1. Introduction

Internationalized firms tend to rely on their foreign subsidiaries to collaborate with foreign partners, access global knowledge reservoirs (Cantwell and Piscitello, 2000; Kafouros et al., 2012) and transfer knowledge across subsidiaries (Almeida and Kogut, 1999; Audretsch and Feldman, 1996). In so doing, they may enhance firm innovation. Nevertheless, internationalization also increases coordination and communication costs and may lead to knowledge leakage (Alcácer and Chung, 2007; Fisch, 2003). Prior studies have largely focused on the antecedents of specific individual internationalization decisions instead of examining internationalization as a systematic process (Deng et al., 2020). As a consequence, it is hardly possible to reveal how innovation performance fares with internationalization which is a path-dependent process.

As one of the few exceptions, Elia et al. (2020) build on the geographic relational approach (Deng et al., 2020) to examine the different internationalization paths of Chinese EMNEs and their effects on firm innovation performance. Their main empirical findings show that EMNEs having a portfolio of FDIs with a predominance of M&As as entry mode, emerging economies as host countries, a low average institutional distance and a high average cultural distance report better innovation performance in terms of both quantity (i.e., number of patents) and quality (i.e., patent citations). They also indicate that the investments in advanced countries are beneficial when undertaken through M&As and when they are diversified across different economies.

While Elia et al.'s (2020) findings are interesting and important, we wonder if and to what extent the same results would be obtained using the recent data considering that the global environment has changed substantially since 2013, the latest year Elia et al. (2020) include. . In

this study, we collect 4,543 Chinese outward FDIs up until 2018 to replicate and extend Elia et al. (2020). We deliberately leave out the data after 2018 so that our results wouldn't be spooked by the dramatic U.S.-China tensions and the impact of COVID-19 pandemic. Although replications are generally considered important in scientific research (Kuhn, 1970; Popper, 1959), there is still a lack of appreciation of replicate studies as suggested by a panelist at AIB 2022 who concludes that "[regarding replications], reward systems and manuscript-review processes remain as powerful hurdles." Yet replications play "the fundamental role of protecting against the uncritical acceptance of empirical results" (Singh et al., 2003). This paper represents a serious attempt to replicate an important study on the relationship between internationalization path and innovation performance.

While some of our main results are consistent with Elia et al. (2020), there are extended evidence based on exploring the dual influences of formal institutions, and informal institutions as the moderators on the innovation performance of EMNEs (Fernhaber et al., 2019). . This study contributes to the internationalization literature by enriching and extending our understanding of what could be an effective internationalization path for EMNEs in pursuing innovation. In particular, the results confirm the effectiveness of cross-border acquisition strategy for strategic-assets-seeking EMNEs despite the institutional challenges in host countries

2. Internationalization and EMNE innovation

Considering different innovation systems and national competitive advantages, internationalization can enable EMNEs to acquire or access heterogeneous resources in host

countries. The EMNEs' resource acquisition and accumulation success is achieved through attaining local legitimacy and cooperating with local firms, research institutions and even host country governments (Tang et al., 2020), thereby broadening or deepening their innovative activities (Hitt et al., 1997).

Elia et al. (2020) suggest that a portfolio of FDIs in different geographical locations would be desirable for EMNEs to improve innovation performance. Notably, foreign subsidiaries may, for instance, get access to advanced or complementary technologies and know-how to augment parent firms' existing technological resources by cooperating with local partners(Cantwell and Piscitello, 2000; Castellani et al., 2017; Katila and Ahuja, 2002; Zahra et al., 2000). On the one hand, there are synergistic benefits among the subsidiaries located in different countries via knowledge and information sharing and transferring (Kafouros et al., 2018). EMNEs may establish a complicated knowledge-sharing network and integrate intellectual resources obtained by various overseas subsidiaries, presumably conducive to the innovation of the entire company. On the other hand, EMNEs may leverage their learning advantages to adapt to cross-national complex institutional environments (Petersen and Pedersen, 2002). The dynamic learning mechanisms help EMNEs explore new knowledge and exploit existing knowledge (Alegre and Chiva, 2008) thereby enhancing their innovation performance.

The relationships between internationalization, institutional environments and firm innovation performance have been addressed to a certain extent (Gubbi and Elango, 2016; Pérez-Nordtvedt et al., 2015; Wu et al., 2016). Prior research has provided valuable insights into how institutions affect the international market entry strategy and innovation performance of EMNEs

(Delios and Henisz, 2003; Enderwick and Buckley, 2019; Guillen and Garcia-Canal, 2009). Formal and informal institutional differences between home and host countries engender serious challenges to EMNEs' innovative activities (Elia et al., 2020). Specifically, institutional differences heighten the barriers to transferring organizational practices, technologies and knowledge across borders (Kostova and Zaheer, 1999). For example, cultural distance leads to miscommunications and misperceptions (Shenkar, 2012; D. G. Sirmon and P. J. Lane, 2004). In addition, host country governments' economic policymaking uncertainty may restrict the operational activities of overseas subsidiaries of EMNEs, especially related to local resource acquisitions (Buckley et al., 2019; North, 1990). Consequently, EMNEs must fully abide by host country institutions to gain local legitimacy and global operational effectiveness. Overall, formal and informal institutional differences compromise EMNEs' innovation efforts driven by outward FDIs.

3. Hypotheses proposed by Elia et al. (2020)

3.1 Internationalization path and innovation performance

EMNEs may undertake FDIs through greenfield or M&A in host countries(Williamson, 1985). Elia et al. (2020) argue that, unlike MNEs from developed economies, EMNEs rarely possess strong technological capabilities, which makes them less likely to cultivate new technologies through greenfield investment. Because subsidiaries established through greenfield are normally path-dependent on parent firms, which often lack advanced technologies if they are from emerging economies (Blomkvist et al., 2013). Therefore, if a subsidiary cannot obtain the core technology and knowledge from the parent firm, it may turn to external markets. The mode of acquisition

provides new knowledge and technology for EMNEs. Acquired parties in the host country may provide them with technical capabilities, scientists, networks and customers, which have been demonstrated to positively impact R&D and knowledge development (Bertrand and Zuniga, 2006; Mudambi and Navarra, 2015). Acquisitions provide EMNEs with new access to technology faster than greenfield investments.

Elia et al. (2020) adopt geographic relational approach and propose acquisition as a strategy for internationalization. For EMNEs, foreign acquisitions may occur in various countries (Deng et al., 2020; Hansen et al., 2016). A portfolio of foreign acquisitions established over time facilitates extensive information and knowledge sharing among the parent firms, acquired firms, and local communities. In addition, the learning opportunities embedded in the network help strengthen innovative activities, thereby improving the EMNEs' innovation performance (Elia et al., 2020; Fan, 2011; Kogut and Zander, 1993; Mindruta, 2013). Thus，Elia et al. (2020) propose the first hypothesis：

H 1. Chinese EMNEs' portfolios of subsidiaries that have a higher proportion of M&As than greenfield investments are positively associated with innovation performance.

Elia et al.'s (1998) second hypothesis highlights the impacts of geographical location distribution on EMNEs' innovation performance. The internationalization of EMNEs can vary significantly in geographic breadth and depth (Kafouros et al., 2018) . Though geographic breadth may increase coordination costs, it provides firms with access to new knowledge and technologies bounded by locations. As innovation results from a restructuring process (Narula, 2013), geographic breadth enables firms to capture and combine multiple ideas and projects from different

locations (Cantwell and Mudambi, 2005; Lahiri, 2010). EMNEs from China, in particular, are normally featured with weak competitiveness (Scalera et al., 2020) . Geographic breadth in the internationalization process may help enhance competitiveness by exposing firms to a more differentiated knowledge base (Kafouros et al., 2018).

On the other hand, geographic depth affects innovation performance differently. Multiple subsidiaries in each country can improve EMNE's embeddedness in a given market and its innovation network (Mudambi et al., 2018). However, depth may increase competition between subsidiaries and research laboratories, and reduce their willingness to transfer and receive knowledge from other subsidiaries, and consequently hinders EMNE's innovation performance (Kafouros et al., 2018). Overall, internationalization is likely to improve innovation performance more effectively when EMNEs deploy their portfolio of FDIs more broadly and deeply. It is thus contended that innovation through internationalization is more effective if the path reflects more geographic breadth than geographic depth. Thus， Elia et al. (2020) propose the second hypothesis：

H 2. Chinese EMNEs' portfolios of subsidiaries that have a high geographic breadth are more positively associated with innovation performance than Chinese EMNEs' portfolios of subsidiaries that have a high geographic depth.

Hypothesis 3 highlights the invisible differences between host and home countries. Institutional and cultural distance between home and host countries, which are also related to geography, may result in certain challenges. Institutional distance impedes the transfer of practice, technology, and knowledge within an organization (Kostova and Zaheer, 1999), while cultural distance brings misunderstandings and communication problems (Shenkar, 2012; D. Sirmon and

P. Lane, 2004; D. G. Sirmon and P. J. Lane, 2004). Cultural and institutional distance increases transaction costs in the pre-investment phase and coordination and integration costs in the post-investment phase (Barkema and Vermeulen, 1997; Pant, 2012; D. G. Sirmon and P. J. Lane, 2004). From the perspective of institutional distance, the formal institutional system in China is not yet well developed (especially in terms of intellectual property protection). Chinese EMNEs need to be aligned with the host country's institutional environment and establish legitimacy to operate on a competitive and market-oriented global stage. These extra efforts may increase the costs thereby compromising EMNEs' innovative performance.

In contrast, the cultural distance between China and EMNEs' subsidiary networks may positively contribute to EMNEs' innovation performance. While the cultural distance between home and host countries may affect the ability to interact effectively with host country firms (Basuil and Datta, 2015), it may also introduce different mindsets that enhance creativity. Accordingly, Elia et al. (2020) propose the third hypothesis：

H 3. Chinese EMNEs' portfolios of subsidiaries that have a high cultural distance are more positively associated with innovation performance than Chinese EMNEs' portfolios of subsidiaries that have a high institutional distance.

Hypothesis 4 emphasizes the economic development level of host countries. The host country's economic development is another key factor differentiating the "location" dimension of a company's internationalization. Investments in developed countries, especially in North America, Europe and Japan, provide EMNEs with access to valuable tangible and intangible resources not normally available in their home countries (Buckley et al., 2014; Luo and Tung, 2007;

Piperopoulos et al., 2018; Rabbiosi et al., 2012; Ramamurti, 2012). Conversely, when the host country is an emerging economy, the EMNE may operate similarly to its home country. These characteristics include weak national innovation systems that offer limited opportunities to improve innovation performance (Rabbiosi et al., 2012) . Using the geographic relational approach, we expect EMNEs and their managers to use their portfolios of subsidiaries to develop economic relationships with local business networks to forge partnerships, share business ideas and fill their gaps in experience (Kemeny et al., 2015; Shi et al., 2014). Given the limited managerial and technical knowledge of EMNEs, this innovation process may be more efficient when acquiring know-how in developed (rather than emerging) countries, as cutting-edge scientific knowledge and technologies provided by advanced economies can be used for developing new products and markets (Deng et al., 2020; Fu et al., 2011). Therefore, Elia et al. (2020) propose the fourth hypothesis:

H 4. Chinese EMNEs' portfolios of subsidiaries that have a higher proportion of developed than emerging countries are positively associated with innovation performance.

3.2 An extension of Elia et al. (2020): Institutional heterogeneity and innovation performance

Innovation performance is gauged along different dimensions (Elia et al., 2020). Extant literature, however, seldom distinguishes between potential and actual innovation performance. We note that such a distinction is non-trivial for EMNEs because of their highly differential motivations for innovation. For example, as latecomers in the global arena, some EMNEs tend to be very aggressive in demonstrating innovation through actively submitting patent applications. In

contrast, some other EMNEs adopt an incremental approach moving from imitation to innovation. Further, EMNEs tend to be responsive or vulnerable to government mandates and thus may symbolically pursue innovations to obtain special subsidies and tax benefits (Huang et al., 2017; Jia et al., 2019). This line of reasoning suggests the need to examine potential innovation performance in addition to the actual one.

According to the institution-based perspectives, organizations may respond to institutional environments differently (Greenwood et al., 2011; Pache and Santos, 2010). Therefore, EMNEs adopting different internationalization paths may be subject to differential influences of the institutional forces with implications for innovation performance. The potential feasibility of EMNEs to enhance innovation through international expansion depends on their capabilities to acquire and deploy advanced or complementary resources in host countries stably and continuously, which is affected by the host country's formal institutions, including government policies (Gereffi, 2009).

3.2.1 Moderating effects of economic policy uncertainty

Economic policy uncertainty refers to the fact that financial entities cannot predict with certainty whether, when and how the government will change the current economic policy (Gulen and Ion, 2016). Among others, economic policy uncertainty affects the investment behaviours of EMNEs (Xu, 2020).

Specifically, the economic policy uncertainty of the host country may weaken EMNEs' innovation motivation through cross-border acquisitions because innovation takes time (Manso, 2011), and economic policy uncertainty could potentially cause disruptive consequences.

A high economic policy uncertainty reflects a robust economic intervention by host country governments (Campello et al., 2010). For instance, host country governments may adopt new monetary or fiscal policies unsuitable for firm investment (Baum et al., 2010; Panousi and Papanikolaou, 2012). A host country's government may also set up various barriers to prevent its strategic assets from flowing out of the country, especially when the host and the home countries are in an economic and political competition mode (Buckley et al., 2019). Compared with greenfield investments, the strategic assets acquired by the EMNEs through cross-border acquisitions are more sensitive to restrictions of the host country governments. Therefore, the economic policy uncertainty may impede the movement and transfer of valuable resources from the overseas subsidiaries back to the parent firms, weakening the latter's innovation performance. Hence:

H 5. Economic policy uncertainty of the host country weakens the positive relationship between the proportion of foreign acquisitions and the potential innovation performance of EMNEs.

3.2.2 Moderating effects of culture distance

Institutions impose legal, political, social or other constraints on EMNEs with either formal rules (e.g., laws, regulations, or policies) or informal rules (e.g., norms, ethics, beliefs, and culture) (McCloskey, 2016; North, 1990). The latter is the informal institutional distance between the home and host countries. Unlike formal systems, informal systems are invisible and embedded in the social environment.

The cultural distance between the host and home countries affects the relationship between

internationalization strategy and performance (Xie, 2017). Cultural differences underscore diversity. Creativity and innovation can be promoted by introducing different ways of thinking (Elia et al., 2019; Meirovich, 2010). Cultural diversity enables firms to break the rigidity of the psychological structure and decision-making process and develop new knowledge structures and cognitive maps (Palich and Gomezmejia, 1999; Stahl and Voigt, 2008). However, it is also argued that bilateral cultural differences lead to a lack of trust and increased communication and coordination costs, which has a strong negative impact on the performance of overseas subsidiaries (Beugelsdijk et al., 2018; Puck et al., 2016).

Specifically cultural distance tends to hamper the innovation of EMNEs. Researchers with different cultural backgrounds may have to deal with challenges in information collection, communication, and interpretation which decreases the efficiency of innovative activities (Beugelsdijk et al., 2018). Furthermore, due to the complexity of technological innovation, the interactivity of the researchers could be significantly weakened, resulting from a cultural distance, which may decrease the innovation potential of EMNEs.

In addition, one of the core concerns for strategic assets seeking acquisitions is integrating the EMNE and the acquired firm. Cultural distance between the EMNE acquirers and the local acquired firms may alleviate the effectiveness of communication channels that transfer critical knowledge and capabilities from one side to the other (Gaur et al., 2019; Reus and Lamont, 2009; Lopez-S'aez et al., 2021). Further, technical knowledge tends to be tacit (Russell, 1999). When cultural distance makes it difficult for the acquirer and the acquired to agree, there could be a trust crisis in the organization, which leads to loss of R&D human resources or even aggressive

behaviours (Very et al., 1996). Therefore, we argue that cultural distance reduces the willingness of the acquired to contribute to new knowledge development. The increase in the difficulty of resource transfer weakens the innovation performance of EMNEs. Hence:

H 6. Cultural distance weakens s the positive relationship between the proportion of foreign acquisitions and the potential innovation performance of EMNEs.

4. RESEARCH METHOD

4.1. An overview of replication and procedures

To the extent that science is a cumulative enterprise (Kuhn, 1970) , replication is the best way to "winnow the measures, methods, and theories based on accumulated evidence" (Pfeffer, 1993). To the extent that strategy research aspires to become a scientific inquiry, it seems important to engage in cumulative empirical research efforts centered on replications (Singh et al., 2003). This study is essentially a replication of Elia et al. (2020) to examine the reliability and generalization of the results and conclusions.

However, our work is not a replication per se. Rather ours falls into the category of "good-enough replications," a concept promoted by Singh et al. (2003). In other words, it is a replication with extension (Hubbard et al., 1998; Tsang and Kwan, 1999) . We have tried to follow Elia et al. (2020) as closely as possible. As a form of robustness check, we substitute the data from the US patent and trademark office (USPTO) with those from China Trademark and Patent Office (TPO) and extend the observation period up until 2018 (right before the U.S.-China trade war). In addition, we extend Elia et al.'s (2020) research by examining the moderating effects of institutions.

4.1 Sample and Data

The data on innovation in Elia et al. (2020) are mainly from USPTO, while our study uses the data from the PTO of China. In addition, we obtain firm-level data such as outward FDIs from the CSMAR database- a widely used data source of Chinese listed firms (Buckley et al., 2019).

Complementary data were obtained from the official website of the China National Intellectual Property Administration, which also provides patent. Our final sample includes 4,543 outward FDIs made by Chinese EMNEs from 2008 to 2018 as opposed to Elia et al. (2020) covering the observation period from 2008 to 2013.

Among the Chinese EMNEs in our sample, 51.9% have one foreign subsidiary, 22.58% have two foreign subsidiaries, and the remaining have three or more foreign subsidiaries. Regarding the outward FDI portfolio,6.5% of the Chinese MNEs have made FDIs only through acquisitions, 84.5% have made greenfield investments only, and the remaining have both. Table 1 shows the sample's structure differences compared with Elia et al. (2020).

Table 1 Sample structure comparison with Elia at al. (2020)

	Our study	Elia at al. (2020)
one foreign subsidiary	51.9%	51.45
two foreign subsidiaries	22.58%	15.61
only through acquisitions	6.5%	32.76%
only through greenfield	84.5%	37.93%

4.2 Measures and models

4.2.1. Dependent variables

Following Elia et al. (2020), we employ patent data from China's TPO to measure the innovation performance of Chinese EMNEs. First, we measure the scale of innovation performance by using the total number of patents granted to Chinese EMNEs and their subsidiaries. To measure the quality of innovation, we use each patent's citations. Unlike Elia et al. (2020), we also count the cumulated number of citations received by each patent in the next two years after being granted. Further, we measure the potential of innovation performance by using the number of patents applied by Chinese EMNEs and their subsidiaries.

4.2.2. Independent variables

M&As Proportion. M&A proportion are the primary explanatory variable in the study. Therefore, we adopt the same measure as Elia et al. (2020): the percentage of foreign acquisitions out of the total outward FDIs.

Breadth. Geographic breadth describes how widely EMNEs spread their subsidiaries across countries. Consistent with Elia et al. (2020), we use the number of countries in which the subsidiaries of each Chinese EMNE are located.

Depth. Geographic depth captures the number of subsidiaries in each country for each Chinese EMNE. We also follow Elia et al. (2020) and calculate the number of subsidiaries in each host country in which each Chinese EMNE operates.

Institutional distance. Institutional distance is measured by six items provided by the Heritage Foundation including voice and accountability， political stability， government

effectiveness，regulatory quality，the rule of law，and control of corruption. This is also a widely used measurement of formal institution in IB though it's slightly different than Elia et al.'s (2020) study, which is more comprehensive, taking into consideration of geographical distance and ten items from the Heritage Foundation.

Cultural distance. We follow the method of (Lavie and Miller, 2008) to measure the cultural distance by using the average cultural distance between China and the host countries where a Chinese EMNE's subsidiaries are located. In addition, we adopt the index of cultural dimensions developed by (Hofstede, 1980) and the calculation method by (Kogut and Singh, 1988). The cultural distance is measured based on the following five dimensions: 1) power distance; 2) collectivism versus individualism; 3) femininity versus masculinity; 4) uncertainty avoidance; 5) long-term vs short-term orientation, which is similar to Elia et al. (2020).

4.2.3. Moderators (Extension of the original study)

Economic policy uncertainty and cultural distance.

To extend Elia et al.'s (2020) study, we examine the institution's moderating effects, including cultural distance and economic policy uncertainty. We use the Economic Policy Uncertainty index of the host country developed by (Baker et al., 2016). The original economic policy uncertainty indexes are all monthly data. The monthly economic policy uncertainty indexes are weighted and averaged to obtain the annualized indexes. We also calculate the average value of the economic policy indexes among the host countries where a particular Chinese EMNE invests in a given year.

Control variables. Following Elia et al.'s (2020) study, we control for the same variables in our study, which are measured in the same way.

Firm-level variables**.** First, *R&D* intensity is controlled for, representing a Chinese EMNE's innovation inputs. We measure it with the investment of each Chinese EMNE in R&D to total assets. This variable captures the extent to which a firm is R&D-intensive. Second, *firm size* is also controlled for, measured with the number of employees of each Chinese EMNE in 2013. Third, the *Firm age* of the EMNE is controlled for. Fourth, the *State ownership background* is controlled for with a dummy variable with the value of 1 representing the existence of government ownership.

Industry-level variables**.** We also employ a variable controlling for the technology intensity of EMNEs' industries, i.e. *High-Tech Industry*, a dummy taking the value of 1 if the Chinese EMNE operates in an industry classified as High-Tech or Medium High-Tech. However, due to the consideration of the empirical context, we adopt the categorization from CSMAR instead of Eurostat-OECD, which is used in Elia et al. (2020).

As the two dependent variables (potential innovation performance and actual innovation performance) are continuous, the means and variances of the innovation variables are not equal, and the alpha test is insignificant, we decide to adopt a negative binomial regression analysis following the original study (Elia et al., 2020). Appendix 1 provides detailed information on the data sources and measures of the variables.

5. Results and Findings

Table 2 reports the results of the descriptive statistics and correlation matrix. Except for patent applications and the number of granted patents, the correlation coefficients are low, which suggests no serious concern with multicollinearity. To understand the importance of the results in terms of

impact, we provide information on the size effect of each variable by reporting the incident rate ratios (IRR) associated with the coefficient of each dependent variable.

Table 2 Descriptive statistics and matrix of correlations

		1	2	3	4	5	6	7	8	9	10	11	12	13
1	Innovation Scale	1												
2	Innovation Quality	0.555	1											
3	M&As Investments	-0.009	-0.022	1										
4	Geographic Breadth	0.101	0.083	-0.305	1									
5	Geographic Depth	-0.007	-0.010	-0.251	0.317	1								
6	Institutional distance	-0.037	-0.019	-0.055	-0.067	0.013	1							
7	Cultural distance	-0.018	-0.017	-0.061	0.026	0.016	0.271	1						
8	Developed Host Countries	-0.006	-0.024	-0.157	0.194	0.088	0.529	0.101	1					
9	EMNEs R&D Intensity	0.073	0.037	-0.059	0.071	-0.074	0.002	-0.069	0.034	1				
10	EMNEs Size	0.227	0.186	-0.080	0.260	0.192	-0.069	0.008	0.053	-0.191	1			
11	EMNEs Age	0.073	0.036	0.014	0.086	0.086	-0.088	0.010	-0.032	-0.140	0.402	1		
12	EMNEs Government Ownership	0.085	0.104	0.072	0.011	-0.026	-0.016	0.050	-0.010	-0.151	0.386	0.368	1	
13	High-Tech Industry	0.018	0.022	-0.024	0.019	-0.051	-0.015	-0.053	-0.005	0.202	-0.080	-0.148	-0.130	1
	Observations	4268	4269	4269	4269	4269	4269	4269	4269	4268	4268	4078	4269	4269
	Mean	11.789	12.159	0.910	2.163	1.592	2.767	2.628	0.790	0.021	22.634	1.987	0.308	0.629
	Std.	65.382	71.192	0.199	2.176	1.974	1.625	1.385	0.408	0.025	1.389	0.858	0.462	0.483
	Min	0	0	0.025	1	1	0.084	0.556	0	0	17.388	0	0	0
	Max	1799	1953	1	32	46	6.206	7.678	1	0.643	28.055	3.332	1	1

5.1. Findings compared with Elia et al. (2020)

Table 3 provides the results of our replication analysis. The first hypothesis of Elia et al. (2020) is that Chinese EMNEs' portfolios of subsidiaries that have a higher proportion of M&As than greenfield investments are positively associated with innovation performance. This hypothesis is supported in Elia et al.'s (2020) study. Our results are similar to Elia et al. (2020) by partially supporting H1. As shown in Table 3, the results of model 1 indicate that the proportion of M&As is positively related to the scale of innovation ($P<0.1$, IRR=1.2415), which is consistent with Elia et al. (2020). However, we did not find significant relationship between M&As and the quality of innovation ($P>0.1$, IRR=0.7776).

The second hypothesis focuses on geographic characteristics of the investment. It is put forward that Chinese EMNEs' portfolios of subsidiaries with a high geographic breadth are more positively associated with innovation performance than Chinese EMNEs' portfolios of subsidiaries with a high geographic depth. This hypothesis is marginally supported in Elia et al. (2020) with the suggestion that geographic breadth and depth have weak impact on innovation performance. Our results are consistent with Elia et al. (2020) but show higher significance. Model 1 in Table 3shows that the geographic breadth is positively related to the scale of innovation ($P<0.01$, IRR=1.0634) and the geographic depth is negatively related to the scale of innovation ($P<0.05$, IRR=0.9550). Model 2 in Table 3 show that the geographic breadth is positively related to the quality of innovation ($P<0.01$, IRR=1.0670), and the geographic depth is negatively related to the scale of innovation ($P<0.01$, IRR=0.9200).

The third hypothesis focuses on the institutional and cultural distance. It is proposed that

Chinese EMNEs' portfolios of subsidiaries that have a high cultural distance are more positively associated with innovation performance than Chinese EMNEs' portfolios of subsidiaries that have a high institutional distance. This hypothesis is supported in Elia et al. (2020). Our results are not consistent with Elia et al. (2020) as neither institutional distance nor cultural distance is significantly associated with scale and quality of innovation as shown in Model 1 and Model 2 in Table 3.

The fourth hypothesis focuses on the economic development level of the host country. It is proposed that Chinese EMNEs' portfolios of subsidiaries that have a higher proportion of developed than emerging countries are positively associated with innovation performance. Elia et al. (2020) doesn't find the support of this hypothesis. Instead, their finding is opposite to their hypothesis. Our results are similar to Elia et al. (2020) as shown in Models 1 and 2 in Table 3.

Regarding the control variables, we have certain results consistent with Elia et al. (2020). For example, *Firm size* is positively related to the scale and quality of innovation. Nevertheless, the findings for the remaining control variables such as *R&D, Firm age, and State ownership background* are largely inconsistent with Elia et al. (2020). In addition, the *High-tech industry* is positively related to the scale and quality of innovation in our analysis whereas in Elia et al. (2020), it is found to be negatively related to the quality of the innovation.

Table 3 Results of the negative binomial analyses

	Model 1		Model 2	
	Innovation Scale		Innovation Quality	
VARIABLES	Coefficient	IRR	Coefficient	IRR
M&As Investments	0.216*	1.2415*	-0.252	0.7776
	(0.120)	(0.1492)	(0.166)	(0.1288)
Geographic Breadth	0.0614***	1.0634***	0.0648***	1.0670***
	(0.0126)	(0.0134)	(0.0155)	(0.0165)
Geographic Depth	-0.0461**	0.9550**	-0.0834***	0.9200***
	(0.0202)	(0.0192)	(0.0286)	(0.0263)
Institutional distance	-0.0298	0.9707	-0.0146	0.9855
	(0.0189)	(0.0183)	(0.0262)	(0.02578)
Cultural distance	0.0435	1.0444	-0.00464	0.9954
	(0.0283)	(0.0295)	(0.0344)	(0.0342)
Developed Host Countries	-0.210**	0.8106**	-0.204*	0.8155*
	(0.0891)	(0.0722)	(0.114)	(0.0933)
EMNEs R&D Intensity	1.245	3.4719	1.331	3.7839
	(0.837)	(2.9052)	(0.809)	(3.0615)
EMNEs Size	0.0897***	1.0938***	0.185***	1.2034***
	(0.0332)	(0.0362)	(0.0381)	(0.0458)
EMNEs Age	-0.243***	0.7842***	-0.114*	0.8920*
	(0.0535)	(0.0419)	(0.0677)	(0.0604)
EMNEs Government Ownership	0.140	1.1499	0.440***	1.5527***
	(0.0976)	(0.1122)	(0.110)	(0.1712)
High-Tech Industry	0.0924	1.0969	0.168**	1.1835**
	(0.0614)	(0.0673)	(0.0835)	(0.0988)
Constant	-2.560***		-5.303***	
	(0.768)		(0.872)	
Observations	2,757		2,372	
Number of id	489		379	

Z-statistics between brackets. * $p < 0.10$. ** $p < 0.05$. *** $p < 0.01$.

5.2. Extension of Elia et al. (2020): Moderating effects of the institutional distance and additional measure of innovation

To further explore the institution's role, we extend the original study by proposing and examining the moderating effects of economic policy uncertainty and cultural distance. Hypothesis

5 is that economic policy uncertainty of the host country weakens the positive relationship between the proportion of M&As and innovation performance of EMNEs. This hypothesis is supported. As shown in table 3, model 3 shows the interaction (*Economic Policy Uncertainty * M&A proportion*) is not related to the potential innovation performance (coef=-0.331, p>0.1); However, the interaction item (*Economic Policy Uncertainty * M&A proportion*) is significantly negatively related to the scale of innovation (coef=-0.750, p<0.01).

Hypothesis 6 is that cultural distance weakens the positive relationship between the proportion of M&A and the innovation performance of EMNEs. It is also supported. As shown in Model 4 and Model 8, the interaction item (*Cultural Distance* M&A proportion*) is significantly negatively related to both the potential (coef=-0.172, p<0.05) and scale of innovation performance (coef=-0.173, p<0.01).

Table 4 Results of the negative binomial analyses.

	Potential innovation performance				Innovation performance			
Explanatory variables	Model 1	IRR Model 2	Model 3	Model 4	Model 5	IRR Model 6	Model 7	Model 8
M&A proportion	0.214*	1.2391*	0.228*	0.344***	0.234**	1.2638**	0.277**	0.386***
	(0.121)	(0.1494)	(0.122)	(0.128)	(0.110)	(0.1384)	(0.110)	(0.119)
*Economic Policy Uncertainty * M&A proportion*			-0.331				-0.750***	
			(0.293)				(0.252)	
Culture distance * M&A proportion				-0.172**				-0.173***
				(0.0694)				(0.0609)
Breath	0.0427**	1.0436**	0.0429**	0.0415**	0.0488***	1.050***	0.0504***	0.0468***
	(0.0187)	(0.0195)	(0.0187)	(0.0188)	(0.0160)	(0.01678)	(0.0160)	(0.0161)
Depth	-0.0318	0.9687	-0.0315	-0.0307	-0.0574**	0.944**	-0.0565**	-0.0577**
	(0.0277)	(0.0268)	(0.0276)	(0.0272)	(0.0244)	(0.0231)	(0.0243)	(0.0242)
R&D	0.280	1.3227	0.287	0.306	0.928***	2.530***	0.914***	0.929***
	(0.434)	(0.5737)	(0.433)	(0.429)	(0.340)	(0.8606)	(0.340)	(0.339)
Firm size	-0.204***	0.8152***	-0.202***	-0.209***	0.0812	1.085	0.0911	0.0863
	(0.0716)	(0.0584)	(0.0716)	(0.0716)	(0.0685)	(0.0742)	(0.0683)	(0.0683)
Firm age	-0.260*	0.7712*	-0.255*	-0.251*	-0.176	0.8385	-0.170	-0.156
	(0.147)	(0.1131)	(0.147)	(0.146)	(0.157)	(0.1315)	(0.156)	(0.157)
Financial performance	0.287***	1.3326***	0.286***	0.290***	0.145**	1.1559**	0.142**	0.146**
	(0.0624)	(0.0832)	(0.0624)	(0.0624)	(0.0588)	(0.0680)	(0.0587)	(0.0587)
Asset-liability ratio	-0.469**	0.6256**	-0.461**	-0.441**	-0.118	0.8891	-0.115	-0.137
	(0.202)	(0.1261)	(0.201)	(0.201)	(0.183)	(0.1629)	(0.183)	(0.183)
State ownership background	-0.382	0.6828	-0.387	-0.397*	-0.603***	0.5473***	-0.597***	-0.636***
	(0.236)	(0.1613)	(0.236)	(0.235)	(0.201)	(0.1101)	(0.200)	(0.200)
Governance quality	-0.191***	0.8258***	-0.191***	-0.184**	-0.186***	0.8305***	-0.180***	-0.179***
	(0.0727)	(0.0600)	(0.0727)	(0.0726)	(0.0670)	(0.0557)	(0.0671)	(0.0669)
Economic policy uncertainty	-0.0734	0.9293	-0.0851	-0.0835	0.0899	1.0940	0.0645	0.0838
	(0.131)	(0.1217)	(0.131)	(0.131)	(0.114)	(0.1249)	(0.114)	(0.114)
Culture distance	0.0843***	1.0880***	0.0847***	0.0810***	0.0900***	1.0942***	0.0928***	0.0866***
	(0.0294)	(0.0320)	(0.0294)	(0.0294)	(0.0284)	(0.0311)	(0.0285)	(0.0284)
Time Control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-0.630		-0.7487	-0.4795	-4.552***		-4.8798	-4.6311
	(1.004)		(1.008)	(1.009)	(0.959)		(0.9572)	(0.9645)
Observations	3,330		3,330	3,330	3,354		3,354	3,354
Number	611		611	611	622		622	622
Chi-square	84.37***		85.71***	91.92***	146.38***		158.03***	157.88***
Log pseudo-likelihood	-5994.298		-5993.6663	-5991.2906	-5467.6876		-5463.3834	-5463.801

Notes: N=3330, standard errors in parentheses*** p<0.01, ** p<0.05, * p<0.1

Appendix 1 Variables: Measures and sources.

Variables	Measures	Sources
Potential innovation performance	The total number of patent applications of the parent company	Annual report
Actual Innovation performance	The total number of patents granted to the parent company	Annual report
M&A proportion	The proportion of M&As as a percentage of the total investment of each Chinese FDI activity	Annual report
Breath	The number of host countries where the overseas subsidiaries of emerging market companies are distributed	Annual report
Depth	The average of the cumulative number of subsidiaries of EMNEs in each host country	Annual report
R&D	The proportion of R&D investment of total sales	Annual report
Firm size	Total assets of the parent firm	Annual report
Firm age	The difference between the observation year of the investment and the year the parent firm was founded	Annual report
Financial performance	Main operating profit	Annual report
Asset-liability ratio	Percentage of total corporate liabilities to total corporate assets	Annual report
State ownership background	Proportion of shares owned by the state and its agents	Annual report
Governance quality	First, for each EMNE we computed the average of the six sub-indicators (Worldwide Governance Indicators) of each host country where the subsidiaries are located. Then we computed the mean value of WGI resulting from the first step.	http://info.worldbank.org/governance/wgi/
Economic Policy Uncertainty	First, the monthly economic policy uncertainty index is weighted and averaged into annual data. Then we computed the mean value of EPU (resulting from the first step) of each host country where the subsidiaries are located.	http://www.policyuncertainty.com/
Cultural distance	First, for each EMNE we capture the cultural distance between the host country and EMNE's home country (i.e., China). Then we computed the average value of cultural distance resulting from the first step.	http://www.geerthofstede.com/

6 DISCUSSION AND CONCLUSION

6.1. Theoretical contributions

We note that Elia et al. (2020) address an important research question: what is the relationship between the way EMNEs shape their portfolio of cross-border investments and their innovation performance? We replicate and extend their investigation and make several substantive contributions. First, we broaden the observation period by including more recent data and employing alternatives measures and find the support of two essential results of Elia et al. (2020). One is that for Chinese EMNEs, innovation performance is better when a firm accumulates disproportionally more cross-border acquisitions over time. This suggest that internationalization via M&As is indeed an effective strategy for EMNEs to upgrade their technologies thereby enhancing global competitiveness. It should be noted that our finding is more conservative and robust as our observation period captures to a certain extent heightened geopolitical challenges since 2013. Scholarly it complements the traditional staged internationalization theory by suggesting that more aggressive internationalization path is better aligned with EMNEs. The other is that focus on other emerging markets rather than developed economies could be beneficial to EMNEs' innovation performance. This seems to challenge the tenet that strategic-assets-seeking should be pursued in developed world. found how entry mode strategy research can be advanced through cumulative empirical efforts. In other words, the two main results of ours lend credibility and robustness to Elia et al. (2020).

Second, by using alternative measurement of innovation we enrich and deepen our understanding of the concept of innovation by distinguishing between potential and actual

innovation performance. Prior studies compare the scale and quality of innovation (Elia et al., 2020; Phene and Almeida, 2008), but they seem to overlook potential innovation performance, especially for EMNEs, which strongly reflects their efforts/motivations to acquire and develop resources and capabilities to innovate via international expansion (Enderwick and Buckley, 2019; Kafouros et al., 2008). Due to the difficulty of innovation, the actual innovation performance may not be sufficient to capture the characteristics and extent of innovation of EMNEs. Internationalization is usually a mid or long-term strategy for a firm. It takes time for a firm to absorb, accumulate and digest heterogeneous resources acquired via internationalization. Thus, the potential innovation performance is also an important indicator that shows a firm's potential capability to achieve innovation objectives in the long term.

Third, extending Elia et al. (2020), we reveal that the host country's economic policy uncertainty (reflecting formal institutional instability) weakens the positive effects of foreign acquisitions on EMNEs' actual innovation performance. Nevertheless, it doesn't seem to influence their potential innovation performance. It seems to echo Atanassov et al. (2015) who argue that the increase in policy uncertainty leads to increased R&D expenditure, especially in industries with fierce product competition, cutting-edge innovation, and high growth. Compared with the host country's economic policy uncertainty, the cultural distance (reflecting informal institutional challenges) seems more difficult for EMNEs to deal with. Consequently, it compromises the positive impact of foreign acquisitions on both the potential and actual innovation performance of EMNEs.

7. LIMITATIONS AND FUTURE RESEARCH

One of the key limitations of replication research is that even a single successful replication "does not mean conclusive verification" (Tsang and Kwan, 1999). One potential research direction is to explore further the heterogeneity of the impacts of FDI portfolio strategies on the innovation performance of EMNEs. The concept and real motivation of innovation may vary in different institutions. For example, firms may attempt 'fake innovation' to respond to the shift of policy environment to gain government resources rather than innovation performance itself. Though we have tried to use the potential of innovation performance, measured by the application number of patents, to differentiate the heterogeneity of innovation performance, our results are rather tentative. Future research along this line is definitely warranted.

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Impending Political Promotions and Risk-taking:

Evidence in China's Banking Industry

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Abstract

This study explores the impact of impending political promotions on firms' risk-taking from the lens of agency theory. Using a sample of China's local commercial banks (including city and rural commercial banks) from 2007 to 2020, I find that impending political promotions positively affect banks' risk-taking. I further develop a multi-level framework to examine moderating effects at event and environment levels. I find that the positive impact of impending political promotions on banks' risk-taking is weakened by the continuance of political connections and strengthened by market development. My study opens a new avenue for exploring the role of public agents in affecting risk-taking.

Keyword: risk-taking; impending political promotion; agency theory; political connections; institutional environment.

1. Introduction

Risk-taking, broadly recognized as the basis of decision-making, has significant implications for firm performance and survival (Bromiley, 1991; Li & Tang, 2010; Sanders & Hambrick, 2007). Prior studies about firm risk-taking have focused on slack (Bromiley, 1991; Singh, 1986), performance feedback (Greve, 1998; Ref & Shapira, 2017; Xu, Zhou, & Du, 2019), top management incentives(Deutsch, Keil, & Laamanen, 2011; Hoskisson, Hitt, & Hill, 1993; Rajgopal & Shevlin, 2002;

Wright, Kroll, Krug, & Pettus, 2007) and top managers' psychological characteristics (Li & Tang 2010). However, existing studies paid less attention to the incentives of firm risk-taking driven by political risk, especially the roles of public agents (i.e., politicians). Meanwhile, prior research on political risk largely focuses on the overall institutional effect assuming public agents obtain homogeneous interests and policy preferences (Spencer & Gomez, 2011), while politicians embedded in varying stages and institutional contexts in fact are different (Wang & Luo, 2019; Zhong, Lin, Gao, & Yang, 2019). In this study, I introduce a source of political risk: the impending political promotion. What is the effect of impending political promotions on firm risk-taking? Are there constraints for such an impact?

To address these research gaps and questions, this study this paper investigates the impact of impending local political promotions on firm risk-taking in China's banking industry from the lens of agency theory. Competition for promotions, becoming fiercer as the politician turnover event is approaching, motivates public agents (i.e., local politicians) to allocate their efforts to improve the economic performance of the region they master, which accelerates the pace of marketing activities such as lending conducted by local banks and increase banks' risk-taking due to limited time of evaluating loans' quality. However, this impact is varying across contingent factors at the event (i.e., the continuance of political connection) and the environmental (i.e., market development) levels. We argue that these contingencies can weaken and strengthen the relationship between impending political promotions and banks' risk-taking respectively. I examine my theory using a sample of local commercial banks in China during the period from 2007 to 2020. China is a natural setting for this research. First, China combines political centralization at national level and economic decentralization at the provincial level (Li & Lu, 2020; Xu, 2011; Yue, Wang, & Yang, 2019), with variations in policies and regulations across provinces. Second, local politicians are mostly rewarded for economic growth. Third, political

forces are strong enough to shape the incentives of economic agents and affect the capital allocation process. Finally, senior-level political promotions in China, typically planned by the central government at least one year in advance, are well-orchestrated events, which is critical to this research design since incentives arising from the anticipation of agents within the province before the actual promotion events happen (Piotroski & Zhang, 2014).

My study strives to make several contributions to the literature. First, this paper contributes to firm risk-taking literature by linking the roles of public agents to firm risk-taking, which is neglected by previous studies. Second, this paper contributes to political risk literature by emphasizing the importance of regarding politician promotion as a vital source of political risk and viewing politician promotion as an antecedent of bank risk-taking from the lens of agency theory. Third, this paper exploits a special research context, China, to explore the effects of impending political promotion on banks' risk-taking, which is quite different from western contexts.

2. Theory and Hypotheses

Promotion tournament literature (Bognanno, 2001; Lazear & Rosen, 1981) emphasizes that competition for promotions in organizations can motivate individuals to allocate their efforts in different tasks since people pursuit the wage increase. As politicians' wages are regulated in China, the incentives shift from wage increase to the increase in power and status brought by political promotion (Li & Lu, 2020). Since provincial-level political promotions in China are planned by the center at least one year in advance, chosen politicians are commonly aware of their candidacy (Piotroski & Zhang, 2014). Promotion incentives of local politician arising from impending political promotion events thus become powerful in the influenced region at the time approaching the actual political promotion event. When a

politician's performance is largely evaluated according to economic performance or market development activity that can be intervened by politicians, decentralization of decision making provides local politicians more opportunities to exercise their political authority and use the market mechanism to enhance their own career prospects. From the lens of agency theory, public agents (i.e., local politicians), can easily get rid of risk caused by radical policies manipulated by local politicians through being assigned to another place since Chinese political system requires government politicians to rotate their positions across various geographic locations or departments every 5 years (Zhong et al., 2019). Because of short tenure and career mobility, local politicians can be expected to be risk neutral, willing to undertake projects that might result in a positive net present value, regardless of its current risk level. Furthermore, incentives created by the impending turnover of local politicians can accelerate the pace of marketing activities such as lending conducted by local banks, which may result in some unperforming loans due to limited time of evaluating loans' quality and increase banks' risk-taking.

Hypothesis 1: Impending political promotions is positively related to banks' risk-taking.

However, this impact is varying based on the expected degree to which political connections remain. Political connections, personal ties between firms' upper echelons and politicians, is a key mechanism for firms to secure resource and gain policy supports from government (Jiang, Jia, Bai, & Bruton, 2021). In comparison with the remain of the promoted public agents in current province (e.g., party secretary was promoted from the provincial governor in the same province), the removal of the public agents from the affected province leads the disruption of existing political connections (Piotroski & Zhang, 2014). Therefore, on one hand, firms are likely to engage in seeking more resources (e.g., funds) before the incumbent politicians leave the current province to make use of soon to be lost connections, which interferes banks' lending activities and increase banks risk-taking. On the other hand, compared with

politicians who leave the current province after promotion, politicians who remain in the current province must face with the increase of banks risk-taking in the following days due to continuance of political connection between banks and politicians, which constrain their desire to push local banks to participate in rash lending activities.

Hypothesis 2: Continuance of political connection weakens the positive relationship between impending political promotions and banks' risk-taking.

Meanwhile, this impact is varying based on the market development. Since local politicians are more likely to be evaluated and rewarded by market development activities in deregulated environments (Piotroski & Zhang, 2014), their desire to engage in strengthening market performance will increase in the environment with less institutional barriers and higher degree of marketization.

Hypothesis 3: Market development strengthens the positive relationship between impending political promotions and banks' risk-taking.

3. Methods

3.1 Data and Sample

My sample frame consists of China's local commercial banks between 2007 and 2020. I collected data from three sources. First, I obtained financial data of local banks in China and province-level data from Wind Financial Database (WIND), a database widely adopted by past studies (Carpenter, Lu, & Whitelaw, 2021; Chen, He, & Liu, 2020). Second, I collected political promotion events data from "Chinese Personnel Database" on the website of People's Daily Online (http://cpc.people.com.cn,) and missing data supplemented by Google web searches. Third, I obtained market development index from National Economic Research Institute (NERI) database. My sample covers local banks in China

(including city and rural commercial banks) from 2007 to 2020. After excluding firm-year observations with missing values, I obtained a final sample of 3,788 firm-year observations from 2007 to 2020.

3.2 Dependent variable

Bank risk-taking. In line with the previous literature on bank risk-taking (Houston, Lin, Lin, & Ma, 2010; Khan, Scheule, & Wu, 2017; Laeven & Levine, 2009), I use the natural log of Z-score to measure bank risk-taking. Z-score equals the return on assets (ROA) plus the capital-asset ratio (CAR) divided by the standard deviation of asset returns. For ease of interpretation, I multiply Z-score by minus one and define the measure to be increasing in bank risk-taking.

3.3 Independent variable and moderators

Impending political promotion. Following Piotroski & Zhang (2014), I use treatment dummy variable to measure *impending political promotion*. Treatment dummy equals one if the year corresponds to the year one year or two years prior to the year of a political promotion event in affected province, and zero otherwise. *Continuance of political connection*. The first moderator is *continuance of political connection*. I use a dummy variable coded as 1 if the promoted official remains in the current province, and 0 otherwise (Zhong et al., 2019). *Market development*. The second moderator is *market development*. I use the market development index obtained from *National Economic Research Institute* (*NERI*) database to measure the degree of marketization at the province level (Fan, Wang, & Zhu, 2021).

3.4 Control Variables

I added a set of control variables that may affect banks' risk-taking (Mollah, Liljeblom & Mobarek, 2021). First, I controlled for bank-level variables. To be specific, I controlled for bank age; bank size; loans asset ratio; loan loss provision; efficiency; income diversity, too-big-to-fail (Houston et al., 2010;

Khan et al., 2017; Laeven & Levine, 2009; Maskara & Mullineaux, 2011; Ref & Shapira, 2017). Second, I included province-level control variables. I controlled for the gross domestic product (GDP) in a certain province; inflation rate (Khan et al., 2017; Laeven & Levine, 2009). Finally, I included firm-specific, year-specific and province fixed effects in our models to constrain the potential endogeneity problem resulting from some unobserved omitted variables.

3.5 Methodology

The timing of such impending political turnover events varied across provinces. Province-level variation in the occurrences of these events provides for temporal and spatial variation in incentives, eliminating concerns that factors specific to a period or region driving the results and enabling me to use quasi-experimental approach, difference-in-difference to do this research. I tested my hypotheses using difference-in-difference including year-, firm- and province- fixed effects with robust standard error. I checked the mean of VIFs for the full regression model to see whether multicollinearity causes a problem, and the average VIF is 2.72, which is below the commonly accepted value of 10.

4. Results

Table 1 presents the results for H1-H3. As shown in the first column (Model 1), the term of the political promotion is positive (b =0.0832, p=0.042) at a 0.05 significance level, which shows that the positive relationship between the impending political promotion and the banks' risk-taking, which is consistent with my prediction. The result in Model 2 shows that the coefficient of the interaction is negative (b =-0.193, p=0.031) at a 0.05 significance level, which indicates that the continuance of political connection weakens the positive relationship between impending political promotion and banks' risk-taking. Thus, the result supports Hypothesis 2. Finally, the result in Model 3 shows that the

coefficient of the interaction is positive (b =0.0692, p=0.000) at a 0.01 significance level, which indicates that market development strengthens the positive relationship between impending political promotion and banks' risk-taking. Therefore, Hypothesis 3 is supported.

5. Discussion

My study finds that the there is a positive impact of impending political promotion on bank's risk-taking, and this impact varies across contingent factors at the event (i.e., continuance of political connection) and environment (i.e., market development) levels. The continuance of political connection weakens the positive relationship between impending political promotions and banks' risk-taking, while market development strengthens this positive relationship. My study seeks to make two main contributions. First, it contributes to firms' risk-taking literature by linking the roles of public agents to firms' risk-taking, an under-studied aspect, in strategic management. Second, this paper contributes to political risk literature by emphasizing the importance of regarding politician promotion as a vital source of political risk and viewing politician promotion as an antecedent of banks' risk-taking from the lens of agency theory, which helps point toward a new direction for future research.

Table 1 Results to support H1-H3

DV=Banks' risk-taking	(1)	(2)	(3)
	Model 1	Model 2	Model 3
Impending political promotion	0.0832**	0.139***	0.0954**
	(0.042)	(0.002)	(0.020)
Impending political promotion *Continuance of political connection		-0.193**	
		(0.031)	
Impending political promotion * Market development			0.0692***
			(0.000)
Market development			-0.0316
			(0.451)
Continuance of political connection		0.237***	
		(0.001)	
Loan loss provision	0.240***	0.242***	0.244***
	(0.000)	(0.000)	(0.000)
Firm age	0.0868	0.0887	0.0875
	(0.247)	(0.232)	(0.240)
Firm size	-0.130	-0.127	-0.137*
	(0.112)	(0.119)	(0.094)
efficiency	-0.0247	-0.0266	-0.0283
	(0.650)	(0.631)	(0.613)
Loan asset ratio	-0.0106***	-0.0105***	-0.0104***
	(0.000)	(0.000)	(0.000)
Income diversity	-0.000467*	-0.000477*	-0.000454*
	(0.063)	(0.059)	(0.071)
GDP	-0.422**	-0.389**	-0.422**
	(0.013)	(0.023)	(0.014)
Too Big to fail	-0.162	-0.175	-0.128
	(0.331)	(0.300)	(0.442)
Inflation rate	-0.00607	-0.0152	-0.0175
	(0.882)	(0.711)	(0.668)
Unemployment	-0.00624	-0.0142	-0.0167
	(0.931)	(0.844)	(0.818)
Constant	3.546	2.969	3.707
	(0.214)	(0.299)	(0.198)
N	3788	3788	3788
adj. R^2	0.306	0.308	0.308
Bank	Yes	Yes	Yes
Year	Yes	Yes	Yes
Province	Yes	Yes	Yes

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The Mediating Role of Involvement for Managing Policy-change Related Uncertainty: A Study in Hong Kong

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The mediating role of involvement for managing policy-change related uncertainty: a study in Hong Kong

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Extended Abstract

This study proposed an integrated framework to explore how individuals responded differently when facing with policy-change related uncertainty. Empirical examination of this framework was proceeded in Hong Kong while policy adjustment during the pandemic period was taken as an example. The results identified the mediation role of impression involvement and value involvement during the appraisal process of policy-change related uncertainty. The significant role of impression involvement in predicting information acquisition and transmission behaviors were revealed, while the value involvement was only positively

associated with the information transmission behavior. Further discussion and theoretical implication were discussed in this study.

Keyword: uncertainty management, impression involvement, value involvement, policy change, Covid-19

1. Introduction

Technology development, economic fluctuation and the everchanging society collectively constitute the liquidity of our life today (Bauman, 2005). Adapting with uncertainty turns out to be daily practice of human beings. The interruption of policy change to people's life is one of the manifestations of uncertainty, and it happened even frequently since the outbreak of covid-19. The long-term impacts of policy changes on people were discussed lately while lacked comprehensive empirical examination, especially how these impacts contribute to people's communication behaviors (United Nation, 2022).

Theories exploring individuals' reaction to uncertainty indicated that people would behave differently based on their own interpretation about the message of uncertainty (Berger & Calabrese, 1974; Brasher, 2001; Stephan et al., 1999, etc.). Brasher (2007) proposed theory of communication and uncertainty management and referred the managing process as individuals' interaction with information (i.e., information acquisition, information handling and information use). Li et al. (2017) extended the theory of communication and uncertainty management (Brasher, 2001; 2007) and indicated three plausible behavioral outcomes when

people facing with uncertainty, including information acquisition, information selection, and information transmission.

Despite numerous studies were available in exploring the reasons of the diversity of the outcome behaviors (i.e., affective attitude and level of involvement, etc.) (Johnson et al., 2020; Kim et al., 2010; McKeever et al., 2016), limitations were still identified. This study thus proposed an integrated theoretical framework based on the theory of uncertainty management and communication (Brasher, 2001; 2007) to examine how people process the policy-change related message, and why they would behave differently when facing with uncertainty. In view of the development of Internet, this study was conducted to examine the online information behaviors among Hong Kong residents.

2. Theoretical framework

Taking communicative actions as a measure to confront uncertainty was initially addressed by Shannon (1948). The exchange of information among people can be described as a trade-off process which led to diverse outcome including the reduction of uncertainty, maintenance of uncertainty, and increasing of uncertainty (Brashers et al., 2002; Brashers, 2007; Grant, 2007, etc.). Brasher (2001; 2007) indicated people usually made decision toward the uncertainty based on their appraisal. Appraisal was often discussed from three perspectives including relevancy, coping skills, and congruency, and resulted in multitude information behaviors (Brasher, 2001; 2007). Based on the previous studies related to the factors affecting the

appraisal process as well as the individuals' affective responses to uncertainty, altogether seven hypotheses were proposed.

H1. *Perceived personal relevance to the policy-change related uncertainty is positively associated with the likelihood of conducting online a) information acquisition b) information selection c) information transmission.*

H2. *Perceived sufficiency of current knowledge to the policy-change related uncertainty is negatively associated with the likelihood of conducting online a) information acquisition b) information selection c) information transmission.*

H3. *Perceived self-efficacy in managing the policy-change related uncertainty is positively associated with the likelihood of conducting online a) information acquisition b) information selection c) information transmission.*

H4. *Negative affective response to the policy-change related uncertainty is positively associated with the likelihood of conducting online a) information acquisition b) information selection c) information transmission.*

H5. *Perceived severity of the consequence of the policy-change related uncertainty is positively associated with the negative affective response.*

H6. *Impression involvement mediates the relationship between a) perceived personal relevance b) Perceived sufficiency of current knowledge c) perceived self-efficacy d) negative affective response and respondents' likelihood of conducting online 1)*

information acquisition 2) information selection 3) information transmission.

H7. *Outcome involvement mediates the relationship between a) perceived personal relevance b) Perceived sufficiency of current knowledge c) perceived self-efficacy d) negative affective response and respondents' likelihood of conducting online 1) information acquisition 2) information selection 3) information transmission.*

3. Method

The study was conducted using online survey among the group of Hong Kong residents who might use the Return2HK scheme to travel from mainland China to Hong Kong during the pandemic period. The data collection was from October 25 to November 2, 2021, and the respondents were recruited online through the social media platforms and authors' personal network. Altogether 215 respondents answered a questionnaire.

4. Results

Multiple regression analysis and structural equation model (SEM) was proceeded to test the relationship among different constructs and the validation of the theoretical framework. Overall speaking, the model goodness-of-fit indices indicated good model fit for the structural model. Although the chi-square value was reported to be significant at .001 level, $\chi 2 = 571.03$, $df = 313$, $p < .001$ ($\chi 2/df = 1.82$). The incremental fit measures were examined to be with acceptable model fit. The result showed that the RMSEA equaled to .06 (ranged from .05 to .08), CFI equaled to .94 (higher than .90), and TLI equaled to .92 (higher than .90). Figure

1 summarized the tested structural model.

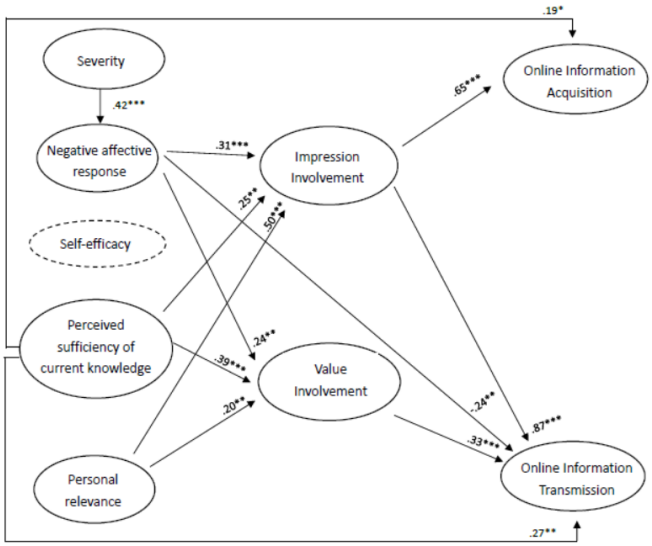

Figure 1

5. Discussion

The tested integrated model in this study revealed the underlying mechanism of uncertainty management for policy change. The findings provided comprehensive empirical insights of the relationships among different motivation factors, involvement constructs, and online information behaviors. The mediation roles of impression and value involvement revealed in this study served as empirical explanation about why individuals would engage in different online information behaviors. The tested integrated model suggested that even though people were activated to pay attention to the policy-change information, such as the adjustment of Return2HK scheme, they might not always engage in the online information behaviors due to the mediation of involvement.

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The Effect of Trade Associations on the Internationalization of Chinese Firms

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Extended Abstract

The Effect of Trade Associations on The Internationalization of Chinese Firms

This paper examines the way in which Trade Associations are affecting internationalization of Chinese firms. In this chapter, the three roles of trade association are examined in association with knowledge acquisition. This study identifies TAs' expertise and capacity to motivate the knowledge development of member firms and finds that the empowerment of trade associations enables them to represent member firms and mobilize resources for their member firms. Results show that a stronger engagement with trade association has a positive effect on knowledge acquisition. Institutional market knowledge and network knowledge arise from the findings.

Keyword: Trade Associations, knowledge acquisition, internationalization

1. Introduction

Trade associations (TAs) as intermediaries in the milieu of strategic business choices need to be explicitly recognized. Neglect of TA networks in catalysing the process of internationalization is surprising, since being a member of TAs may help firms develop capabilities (Kahl, 2014; Minto, 2016) in the provision of knowledge and expertise (Lawton, Rajwani, & Doh 2013). In spite of the noticeable importance of TA for firms, industries, and governments, academia has dedicated surprisingly little attention to understanding them as a focal entity in the IB domain. This study will address the overarching research question: How do TA contribute to their members' knowledge acquisition? To what extent do the roles of TAs contribute to internationalization through knowledge acquisition?

2. Main Body

(1) Activities of TAs to perform the three roles

Overall, this study is revelatory to clarify that TAs are closely relevant and can exert political, regulatory or social pressures. Initial interest is generated growing out of the increasing recognition of TAs with their role in facilitating member firms' capability to gain resources. A comprehensive explanation between the role of TAs and knowledge acquisition is not available in the current literature of TAs, in large part due to theoretical fragmentation. It is time to move TAs towards the

forefront of research, enabling a deep understanding of this entity and underlining its growing importance. Industry voice, broker and counsellor which are identified to develop networks explained the plausible reasons that member firms join TAs. By gaining social and business networks, member firms foster informal relationships with managers of other member firms and formal relationships related to business activities. As an intermediary actor, TAs provide a platform for firms in different markets to interact and consequently initiate international business activities.

Collective activities

TAs are engaged in collective action for the benefit of membership (Esparza et al., 2014). TAs are considered an industry voice in support of the collective needs and goals of the members (Rajwani et al., 2015). As the "industry voice", TAs represent their members to government, regulators and other opinion formers (Rajwani et al., 2015). The important role of TAs has been prominent, inter alia, during the COVID-19 pandemic. They have pooled firms' feedback and have reported to the government, having a considerable effect on state policy adjustment. For instance, business owners are keenly concerned with capital chain rupture issues when resuming work. In response to this problem, a freight-forwarding TA in Shenzhen lobbied the transportation bureau agencies to provide subsidy support for its member firms.

Brokerage activities

Brokerage activities are of significance to gaining foreign business resources for international expansion. The foreign business resources consist of intangible proprietary foreign market information, knowledge and contacts. Informal interactions and information exchange with existing or potential partners through business events enhances such resources acquisition (Tang, 2011). Cooperative networks have important implications for society (Connor & Shumate, 2014). TAs can improve the speed and efficiency of member firms with the provision of dialogue, diffusing information, brokering compromises (Bailey & Rupp, 2006). The relationships in networks are triggers of the inauguration of internationalization. A firm's current business networks can form a bridge to enter new markets (Sharma & Johanson, 1987). The decision-makers made the internationalization choice due to a serendipitous interface with other member firms. In particular, SMEs are introduced into associated business networks abroad by the brokerage activities;

collaborating with overseas trade offices and associations to locate potential local partners (Tang, 2011).

Advisory activities

TAs are used as a supplier of advice and are considered a most important information source (Bennett & Ramsden, 2007). TAs are found to provide expert and advisory services, technology support and market intelligence to member firms (Oparaocha, 2015). The extant studies also suggest member firms are aware of the support service available rendered by TAs (Oparaocha, 2015). By rendering consultancy services, TAs also perform a counsellor role. TAs are one such source of external resources. Identifying as providers of advisory services and gatekeepers to valuable connections (Hanssen-Bauer & Snow, 1996), TAs provide assistance by offering practical advice on taxation, export and payroll and so on. Government work in cooperation with TA to provide business assistance, so TAs have a prominent training and counselling role in supporting SME internationalization (Costa et al., 2017). Sometimes, TAs offer technical support research and development (R&D) of member firms (Costa et al., 2017). Export managers view workshops organized by the TAs as an efficient means of gaining knowledge about overseas markets (Wilkinson & Brouthers, 2006). However, it is also argued that although sometimes TAs provide first-hand information of overseas markets, this information is not substantially used nor considered useful by firms (Costa et al., 2017).

Knowledge acquisition for internationalization and hypothesis development

Knowledge-based views constitute an important perspective in the research which focuses on early internationalizing firms. This particular salience of the knowledge-based views in understanding international growth has also been acknowledged by Autio et al., (2000). Various kinds of knowledge are required in pursuit of internationalization. The general knowledge of internationalization is concerned with operation in different foreign markets, such as similarities in the marketing or manufacturing process that can be acquired with the assistance of TAs (Rhee et al., 2002). Country-specific knowledge features a particular foreign market and might only be gained through direct experiential learning (Rhee et al., 2002). Several major types of knowledge are discussed by a body of scholars. Eriksson et al. (1997, p. 7) stated that market-specific knowledge demands “presence

abroad, exposure to the situation abroad, and interaction with specific customers, intermediaries and other firms" to be useful. Through business activities, idiosyncratic experiences of partners as well as knowledge of the specific market's organization are obtained by the firm. Firms are able to acquire knowledge of the specific market and own experiences of dealing with partners of that market through business activities. Market-specific knowledge can thus be difficult and costly to obtain, but is critical for the successful development of international operations (Lord & Ranft, 2000). The other type of knowledge, internationalization knowledge, is a general type of knowledge that does not relate to a specific market or country (Fletcher et al., 2013; Zahra et al., 2000). Internationalization knowledge is a firm-specific experience of organizing internationalization, accumulated over time. This type of knowledge could be applied in tackling international opportunities and developing operations in different markets.

A set of hypotheses were formed to posit multi-faceted relationships between TAs, knowledge acquisition and internationalization performance of Chinese firms.

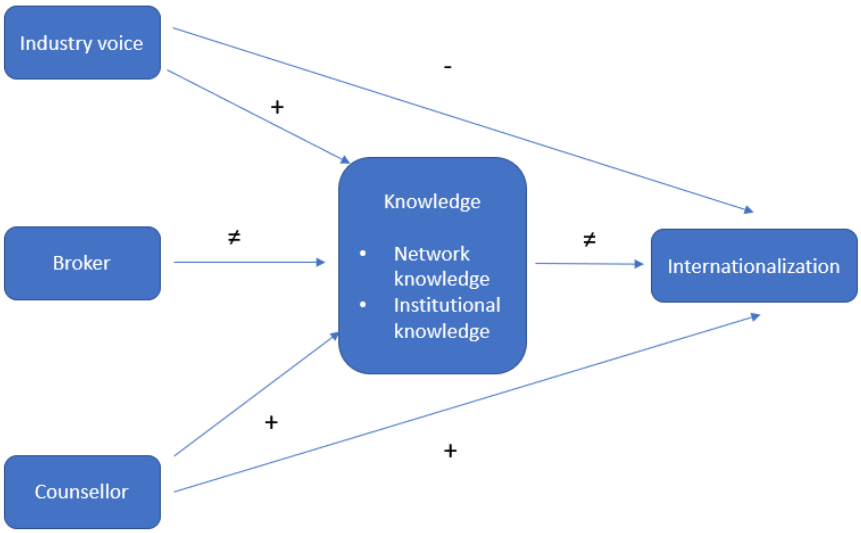
H1 The industry voice role of TAs is positively related to knowledge acquisition of member firms.
H2 The broker voice role of TAs is positively related to knowledge acquisition of member firms.
H3 The counsellor role of TAs is positively related to knowledge acquisition of member firms.

H4a. The industry voice role of TAs is positively associated with the internationalization of member firms.
H4b. Knowledge acquisition positively moderates the influence of the industry voice role on internationalization such that the higher the level of knowledge acquisition, the stronger the influence of the industry voice role on the internationalization of member firms.
H5a The broker role of TAs is positively associated with the internationalization of member firms.
H5b. Knowledge acquisition positively moderates the influence of the broker role on internationalization such that the higher the level of knowledge acquisition, the stronger the influence of the broker role on the internationalization of member firms.
H6a The counsellor role of TAs is positively associated with the internationalization of member firms.
H6b. Knowledge acquisition positively moderates the influence of the counsellor role on internationalization such that the higher the level of knowledge acquisition, the stronger the influence of the counsellor role on the internationalization of member firms.

(2) Method

A mixed-method research design is considered to be most appropriate for this study because the quantitative portion will examine the measure developed in the qualitative study and also provide greater context for quantifying the qualitative results, thereby providing a more fine-grained understanding of the research issues than the use of a single research approach alone. Based on the research objectives, the research design entailed a two-stage empirical process.

Phase 1 addressed the research question by adopting a qualitative approach, I interviewed representatives whose companies are members of TA, using a purposive sampling approach (Guest et al., 2006). I recruited and conducted interviews with TA representatives and firm representatives from around 14 TAs. The sectors varied, including manufacturing, IT and retailing but not limited to these. They were required to be familiar with TA with which they were affiliated. The 30 initial exploratory interviews lasted 40-60 minutes each through WeChat. Phase 2, the set of measurement items was subject to quantitatively test through a survey. Based on interviews and an inclusive literature review, I developed an English version of the questionnaire and translated it into Chinese. A back-translation was made to ensure conceptual equivalence. Before starting the survey, a pre-test was run with two member firms managers for potential definition misunderstandings or language errors.



The above figure summarized the findings of testing hypotheses by using both AMOS 25 and SmartPLS.

(3) Conclusion

TAs have a fundamental role in the development of public goods and the exchange of ideas and information (Porter, 1998). They offer a service package, including seminars, conferences, function and analysis of data, product certification, and legal counselling (Lisowska & Stanisławski, 2015). In order to justify the analysis of the roles of TAs, this research addressed the first question: How do the roles of TAs contribute to their members' knowledge acquisition? Following this, I addressed the inquiry of to what extent the roles contribute to internationalization through knowledge acquisition. The 1st stage qualitative finding disclosed that member firms confirm that TAs perform such roles. The quantitative findings support that the industry voice and the counsellor roles of TAs are positively associated with knowledge acquisition. However, the survey findings fail to support that the broker role is significantly related to the knowledge acquisition of member firms. Moreover, knowledge acquisition was not established as a moderator to contribute to the internationalization of member firms. The rest of this section is devoted to an elaborated discussion.

through other non-TA networks.

Contrary to conventional wisdom, the grounds on which knowledge boosts internationalization are not necessarily found in this study. Supposedly, the entrepreneurs within TA build knowledge about the overseas market, allowing them to identify opportunities. TAs mediated between member firms and helped them collect foreign market lead information. It is revealed by our informants that the use of TAs' network to acquire knowledge might not always be related to internationalization but related to the overall endeavor to grow firm competitiveness. Revealed by the interview data, it has not escaped my attention that not every member firm perceives TAs in a highly functional way. Due to inertia, some TAs are not given credit and value. And mostly, member firms believe the decision of internationalization is not made based on the influence of TAs but it is initiated from self-developing of competitive edge.

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The Bright and Dark Sides of Leadership:

Chairman Overconfidence and Firm Digitalization

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The Bright and Dark Sides of Leadership: Chairman Overconfidence and Firm Digitalization

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Extended abstract

How does leader overconfidence influence firm digitalization? Extending the insights of upper echelons theory to the digital context, we examine the relationship between leader overconfidence and firm digitalization in the context of Chinese non-digital-native firms. Considering the bright side of overconfidence, we argue that a sense of overconfidence and the "illusion of positivity" may encourage firms to adopt a forward-looking stance toward firm digitalization. In contrast, the dark side of overconfidence is that overconfident leaders' limited information-search ability can lead to flawed inputs to digital decisions and activities. We further speculate that the uncertain situational conditions reinforce leaders' cognitive bias of overconfidence. Our findings confirm the idea that the psychological bias of leaders' overconfidence may be beneficial for firms in the digital age.

Keywords: Digitalization; leader overconfidence; non-digital-native firms;

1.Introduction

Digitalization has disrupted the competitive landscape of the global transportation industry. There is insufficient discussion on how leader characteristics influence firm digitalization (Chatterjee, Chaudhuri, Vrontis, & Jabeen, 2022). According to upper echelons theory, leaders' characteristics (specifically cognitive biases) determine how they process information, which clearly plays an important role in decision-making (Merendino & Sarens, 2020) as well as firm digitalization. Overconfidence is "the most significant of the cognitive biases" (Kahneman, 2011). Current research on the impact of leader overconfidence on firm outcomes is mainly divided into two categories. On the one hand, a large body of research based on hubris theory has highlighted the bright side of

overconfidence. The emergence of behavioral decision theory has brought challenges to the above research (De Bondt & Thaler, 1995). Clearly, the trait of overconfidence is prevalent among leaders, and it can lead to both positive organizational outcomes and costly mistakes. However, the current impact of overconfidence on firm digitalization remains unexplored, which is a flaw in existing theories (Fernandez-Vidal et al., 2022). In a digital environment of great uncertainty, how an overconfident leader affects firm digitalization remains an unsolved mystery.

To addresses this research gap, we combine hubris theory and behavioral decision theory to develop two competing hypotheses. And we use environmental uncertainty variables as moderators to better understand the contingency conditions under which overconfidence influences firm digitalization. To empirically test our hypothesis, we conduct a study of listed firms in China's transportation sector, which are viewed as "non-digital-native firms".

2. Literature review and hypotheses

2.1 Leader overconfidence and digitalization

The bright side of overconfidence

The hubris theory perspective emphasizes that overconfident leaders can help firms capture "cognitively distant" opportunities in uncertain environments (Gavetti, 2012), and that the "positive emotions" implicit in overconfidence can help firms accelerate the digital decision-making process and convince other members to be enthusiastic about it, and play an active role in driving firm digitalization. Therefore, we argue that:

Hypothesis 1a: Overconfident leaders are more likely to undertake firm digitalization.

The dark side of overconfidence

Behavioral decision theory highlights that good decision-making requires well-calibrated judgments, and irrational judgments of overconfidence can plunge firms into uncertainty and crisis. Overconfident people tend to be overly reliant on their basic knowledge and experience, and are relatively less involved in evaluating new information, which may ultimately lead businesses to miss out on digital opportunities that they should be seizing. This over-reliance on personal fundamental knowledge and experience is especially problematic in uncertain environments, as digital activities often require perspectives that are novel and different from past experience.

Hypothesis 1b: Overconfident leaders are less likely to undertake firm digitalization.

2.2 The moderating role of intra-organizational uncertainty: crisis status

The bright side of overconfidence

Taking into account the digital upgrade of business processes and organizational structure, it is beneficial for firms to improve efficiency and achieve "overtaking on the curve" in performance. Therefore, when firms are in crisis, if overconfident leaders want to change the status quo and gain more external recognition, they are more inclined to choose risk-taking strategies(Reinwald et al., 2022). On the one hand, this can show investors and the outside world that they are willing to change. On the other hand, it can prove their excellent management skills, indicating that they have the ability to lead the firm to turn the corner and make breakthroughs. Therefore, we predict that crisis status will fuel overconfident leaders' desire to realize "self-worth" and make more efforts to introduce digital activities.

The dark side of overconfidence

Although overconfidence itself does not necessarily lead to wrong decisions, biases can inhibit learning and impair the decision-making process (Zacharakis & Shepherd, 2001). In crises, the focus

and limited information-search scope of an overconfident leader will be tilted towards projects that can maintain firm survival. The leader will tend to choose and stick to traditionally profitable projects that can pay off in the short term, while reducing resource investment in digital projects, because the latter is usually considered to have a high failure rate and a long payback period. Hence, we argue that:

Hypothesis 2: As the level of crisis increases, the association between leader overconfidence and firm digitalization will be strengthened.

2.3 The moderating role of extra-organizational uncertainty: regional digitalization

The bright side of overconfidence

The level of regional digitalization reflects the development and popularization of digital technology in a region. In regions with low levels of digitalization, the lack of sufficient understanding of the digital environment will lead to greater errors in individuals' estimates of their environment (Lin, Li, & Olawoyin, 2020). Overconfident leaders will be more likely to underestimate the issues associated with the complex processes and organizational shifts involved in digital activities, and may pursue faster entry. At the same time, digital activities entail broader risks, but also have greater attractiveness and potential benefits. Overconfident leaders are eager to introduce their own value and extraordinary strategic capabilities to the outside world by introducing digital technology and enhancing the digital level of firms.

The dark side of overconfidence

Overconfidence can lead to flawed inputs to important digital decisions and activities through inaccurate predictions, but a high level of regional digitalization will reduce this inaccurate forecast. Because there are more successful digital cases in areas with high digital penetration, the digital industry is also relatively more concentrated. In such environments, a leader will have more exposure

to digital knowledge, which will effectively update his relevant information about their firm's outlook and digital environment. Hence, we argue that:

Hypothesis 3: As the level of regional digitalization increases, the association between leader overconfidence and firm digitalization will be weakened.

3. Method and results

This study collects relevant data from the CSMAR Database, the Wind Database, and annual reports. We conduct our research using data on 96 listed transportation firms for the period from 2014 to 2019.

Dependent Variable: Digitalization. We indirectly describe the intensity of digitalization through textual analysis of the annual reports of listed firms (Wu, Hu, Lin, & Ren, 2021), determining whether a firm has launched a digital initiative by using keywords related to "digital" in its annual report.

Independent Variable: Leader Overconfidence. We use the relative compensation of chairmen to measure their overconfidence (Hayward & Hambrick, 1997).

Moderator: Regional digitalization. We use five indicators such as regional digital financial inclusion index to construct regional digitalization (Zhao, Zhang,&Liang, 2020). *Crisis status.* We use the Merton Distance-to-Default Model to construct firm crisis status (Bauer & Agarwal, 2014).

Table 1: Chairman overconfidence regarding digitalization

Variable	Model 1	Model 2	Model 3
Overconfidence	78.689**	154.745**	142.220**
	(30.04)	(46.66)	(49.35)
Crisis status		-2.374	
		(2.58)	
Overconfidence x Crisis status		-9.831**	
		(3.41)	
Regional digitalization			-58.489
			(167.69)
Overconfidence x Regional digitalization			-406.752**
			(159.17)
Observations	467	467	467
R-squared	0.166	0.195	0.198
Controls	Yes	Yes	Yes

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

The result shows that the effect of overconfidence on digitalization is positive and significant (b = 78.689, p < .05); Regional digitalization moderates significantly and negatively the relationship between two (b = -406.752, p < .05); the coefficient of the interaction between overconfidence and crisis status is negative (the smaller the value, the more critical the state of the firm) and significant.

4. Conclusion

Extending the insights of upper echelons theory to the digital context, we examine the relationship between leader overconfidence and firm digitalization in the context of Chinese non-digital-native firms. We find that overconfident leaders are more likely to undertake firm digitalization in a "non-digital-native firm". Our results confirm that the bright side of overconfidence plays a key role in firm digitalization. We further speculate that the uncertain situational conditions reinforce leaders' cognitive bias of overconfidence. Our findings highlight that overconfident leaders are more likely to lead firms into the digital age.

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Supply Chain Professional Skill Set in the Post-pandemic Era

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DRAFT /WORK IN PROGRESS

SUPPLY CHAIN PROFESSIONAL SKILL SET IN THE POST-PANDEMIC ERA

INTRODUCTION

We conducted a study to identify the post pandemic professional skills and competencies needed by supply chain managers and leaders in Asia. One of the recommendations of the 2020 McKinsey consultancy report was that leaders should take this opportunity not just to find quick fixes in their organization supply chains, but to also focus on implementing structural changes. However, reimagining supply chains to avoid past traps and meet future needs will require a more comprehensive approach. This implies a reskilling of the supply chain professionals in charge of implementing these changes. Hence, the aim of our study is to identify these skills and suggest the competencies that all supply chain professionals need to acquire moving forward. For this study, we interviewed 20 companies in Asia and the results are summarized in our paper.

RESEARCH METHOD

Interviewees were asked to identify potential changes that may have an impact on the skills and competency required by supply chain professionals in the future, especially during COVID-19 pandemic. A few of the interview questions are listed below:

- • What are the key goals and targets that you have set for your supply chain staff?
- • What are the essential skills or competencies for decision-making to resolve supply chain issues?
- • Where do you see yourself in the next 5 years?
- • Is there anything else that you would like to add with regard to the competencies required from a supply chain manager during the pandemic?

Prior to the interviews, a list of prospective interviewees in various organizations was drawn up, and each of these interviewees was contacted via email inviting their participation to the interviews. The interviews were conducted on a one-on-one basis and averaged approximately 60 minutes. We have conducted interviews with 22 senior supply chain professionals and leaders from 6 countries in Asia to identify the skill competencies required to be a successful supply chain professional. We believe that this is a representative sample of some of the views shared by professionals in the logistics, manufacturing, retailing, and e-commerce industries. In addition, a secondary analysis of published

information including interview data on Al-Futtaim Logistics was conducted to complement the primary interviews.

Literature review [To be expanded]

Murphy and Poist (1991b) identified the following skill sets and qualifications needed for senior-level managers in companies:

- • Business skills. It is necessary for logistics executives to have expertise that is both directly and indirectly related to the company. Understanding of the functional areas that make up a business, as well as knowledge of subjects as diverse as economics, psychology, and sociology, are examples of what is required.
- • Logistics skills. Managers will need to be familiar with a wide range of logistics industries, and companies, both large and small.
- • Management skills. Managing logistics requires a combination of talents in planning and organizing, as well as personal characteristics that will allow them to be effective in this setting.

Due to the fact that SCM is concerned with coordinating the activities of all supply chain members in an effective and efficient manner, it is critical to create metrics that can be used to measure the results of management efforts for both supply chain members and customers. Performance is defined as the outputs and results of SCM research in the traditional sense (Chen and Paulraj, 2004; Closs and Mollenkopf, 2004). When compared to productivity and effectiveness, efficiency is an inward-looking indicator that displays how effectively resources are employed in the accomplishment of output goals (Lai *et al*., 2002). A company's competitiveness is linked to the growth of its human capital, which includes the development of its employees' abilities as well as the development of core competencies that are unique, distinctive, and difficult to replicate (Barnes and Liao 2012).

It is clear from the literature that supply chain managers must possess a range of multidimensional skills and competencies to manage their complex, global supply chains and be in a position to deal with a wide variety of issues and challenges effectively and responsively. Skills cover general, context-independent knowledge, while competencies refer to experience-based and context-dependent knowledge (Gam- melgaard and Larson, 2001). However, there is a lack of consensus and clarification on these skills and competencies or their grouping.

A plethora of skills and competencies are discussed in the literature from various perspectives (e.g., Dubey and Gunasekaran, 2015; Shou and Wang, 2017). This study reviewed several academic and industry articles to identify skills and competencies required for supply chain managers to manage their current and future supply chains and group them.

Overall findings from the interviews group by industry

Logistics industry is a very cost sensitive and customer oriented industry. It tries to keep its costs low while meeting customer expectation. During the pandemic, more workers were advised to work from home but the warehouse operations needed people to move goods. Thus, the logical option in this scenario is to explore automation in the warehousing together with warehouse management system. With automation, there will be more data available for analysis to optimise the company's operations. Data analysis becomes another critical skills for this industry to identify performance gaps and improvement. Soft skills are also important to deal with clients as well as motivating employees. This is a labour intensive industry in Asia and soft skills are needed to handle conflicts and manage expectation with clients.

In addition, problem solving skills and customer oriented are two other competencies that the industry is expecting from the employees. They are troubleshooting issues every day and the problem solving skills are essential part of the skills to resolve the issues. Since some of the issues will affect the clients, they also need to build good customer relationship. Thus, they need to be customer oriented to retain the clients as the switching cost is low in the logistics industry.

The ongoing pandemic didn't seem to deter Al-Futtaim Logistics in running their business operations. Quick and adaptable changes were made and its CEO, Dr. Raman Kumar commented that *"At Al-Futtaim Logistics, we had a strong business continuity plan in place which allowed us to manage the crisis."* He also mentioned, "*The biggest challenge we saw was the mindset of our customers, especially when it came to delivery services and the steps that would need to be taken to ensure that everyone was safe. We had to implement a new Heath Safety Environment (HSE) strategy and follow strict protocols to ensure that everyone would be protected in the work place."*

Manufacturing industry is faced with material and labour shortages due to the lockdown to prevent the spread of the virus. Most of the interviewees have indicated data analysis as one of the key skill set to better understand internal processes and customer's needs during the pandemic. The data will help to identify sales trends and automate simple decision makings to improve productivity. Many companies are using data from their ERP system to analyse consumer behaviour and automate their processes in line with industrial 4.0. Soft skills are also important to manage client expectation and collaboration. It is becoming critical to collaborate and jointly forecast with customers and suppliers during this pandemic period where the supply is uncertain. Siam Cement Group in Thailand is changing some of their supply chain design and strategies

during the pandemic as shown in the Table 1.

Table 1: Supply chain design and strategies during pandemic

Supply Chain Strategies before pandemic	Supply Chain Strategies during pandemic
1. Supply chain efficiency	1. Supply chain redundancy
2. Outsource to lowest cost country	2. Outsourcing locally or near shoring
3. Single or dual sourcing to keep costs low	3. Multi-sourcing to lower supply risks and disruption
4. Centralised warehouse	4. Decentralised warehouse

It can be seen that the supply chain previously (i.e. before pandemic) was focusing on cost saving thus supply chain strategies practises lean management in the supply chain. In terms of purchasing, offshore sourcing, single supplier and centralized warehouse were key strategies for these companies. The challenges for global supply chain during pandemic is to transform their supply chain into a more resilient one while still remaining competitive. Therefore, to meet these challenges, risk mitigation measures must be taken into account when redesigning the supply chain network according to Siam Cement Group. In fact, supply chain strategies will **shift** from cost saving to redundancy by having multiple **suppliers** from local or nearshore suppliers for risk in supply disruption. Partnership and closed collaborations with suppliers and customers is vital during this period by sharing resources, facilities and data to strengthen the relationship while lowering potential supply risk. The adoption of new technologies is inevitable in Siam Cement Group to enhance operations efficiency ranging from warehouse operations such as such as automate warehouse, to more advance technologies in transportation technology like AI, Machine Learning and Autonomous Vehicle Driving.

Trading and retailing industries were not spared by the disruption in the supply chain. Many of the traders and retailers are running short of inventory due to late delivery of goods. Thus most of the interviewees are indicating the need to have proper inventory management during this period. The need to constantly review and adjust their inventory policies and supplier reliability is critical for survival as indicated by the interviewees. Most of these companies are using inventory systems to monitor and plan their inventory. With thousands of SKUs to monitor, it makes sense to implement inventory system to manage their inventory and establish policies within the system to optimise the inventory level.

Most of the interviewees from trading and retailing believe inventory management is critical today, increase safety stock level to reduce the risk of a production slow down or stoppages, thus focus

on supply assurance and shortage management. Shortage management is a strategy that looks at how many items are needed by a specific date and guides purchasing managers to procure them based on this information. Supply assurance looks at all required parts over a very long horizon, taking into account possible shortages and obsolescence, and develops supply plans for those parts.

Companies should have a second look at their current inventory strategies during pandemic to drive order flexibility and service level performance. These include: managing long lead times, inventory positioning, safety stock to counter unexpected demands and dynamic, localized replenishment models to ensure materials are delivered exactly when they are needed - not simply when they're forecasted to be needed.

According to COO of Chilibeli, Mr. Damon Yue, his company is reacting quickly to disruption. It requires a flexible ecosystem of suppliers and partners that can handle sudden shortfalls or even produce new products. That means setting up alternative sourcing and making the most of technologies to optimize cost, improve visibility across the network and accelerate reaction times. Those who rely on imports are shifting inward or closer to their core markets. As for Chilibeli, they are fortunate to be able to source their products within Indonesia. Amid the Covid-19 pandemic, the company needs greater visibility into the supply chains of their suppliers. More companies are applying automation and robotics to make their supply chain more autonomous and adding suppliers in their home markets to ensure business continuity. Control tower solutions that integrate data across the entire supply chain, 5G technology and blockchain offer supply chain team real-time visibility according to the COO. Companies can better calibrate supply with forecast demand by comparing internal capacity data with real-time demand signals such as weather data.

Summary from the interviewees

We see a few important business skills that are key during the pandemic:

1. The ability to explore/implement information technologies are essential business skills as indicated by all the interviewees. Smart sensors, AI, and various business intelligence (BI) tools can help to ensure supply visibility, shipping at low costs, forecast demand, and control inventory. Business intelligence and data analytics, when used strategically, can enable cost reduction and boost efficiency across business functions as indicated by most of the interviewees. Supply chain, for instance, is one such function that can benefit

enormously with the use of data analytics and this can help a company make informed and strategic decisions in times of uncertainty.

2. The need to increase redundancy in inventory, in warehouse space to avoid supply chain disruption since most suppliers are not able to commit their delivery schedule due to lockdown.
3. The need to prepare for crisis management and risk management become more critical now as there are many uncertainty during the pandemic. Supply chain leaders need to identify potential risk in managing the suppliers and customers.
4. The ability to make decision and in solving problems are useful since there many operational issues during the pandemic.

The findings from our study are beneficiary to human resource managers for their new hires, while policy makers and educational and training bodies can also use the findings from this study to design new courses which are necessary to facilitate skill and knowledge development for the future supply chain professionals.

LIST OF COMPANIES WE HAVE INTERVIEWED

Dubai, UAE
Al Futtaim Logistics
https://www.aflogistics.com/

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http://www.gs1my.org/

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https://www.sritranggloves.com/en

Unilever Thai Trading Ltd.

https://www.unileverfoodsolutions.co.th/en.html

Vietnam

A.P. Moller MaerskVietnam Ltd.

https://www.maersk.com/local-information/asia-pacific/vietnam

Cargill Vietnam

https://www.cargill.com.vn/en/about

Procter & Gamble Vietnam

https://business.amchamvietnam.com/list/member/procter-gamble-vietnam-310

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Paper Number: MS0129

Institutions and International Business:

Does Chinese Investment Increase Local Corruption in Developing Countries?

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Institutions and international business: does Chinese investment increase local corruption in developing countries?

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Extended Abstract

How local institutions interact with multinational corporations (MNCs) has long been a subject of debate. The impact of Chinese investment on institutions in developing countries has caught special attention in the recent decade not only because of its growing significance but also due to the apparently unconventional business practices of Chinese companies. Concern has been raised as to whether Chinese investments have caused negative social and governance outcomes. Using firm-level data in developing countries covering the period of 2006-2016, we provide a systematic assessment of the impact of Chinese investment on local corruption. Our instrumental-variable estimation suggests that higher ratio of Chinese investment to local GDP would *reduce* the level of corruption as perceived by domestic firms. This main result passes a battery of commonly recognised robustness tests. Interestingly, our mechanism analysis indicates that FDI from China does not influence the unofficial payment requests made by local officials, but local companies are more likely to reject such requests when they are exposed to more Chinese investment. Finally, we find that Chinese investment improved the quality of local court, which may be an explanation for the higher probability for firms to refuse payment of bribes.

Keyword: Institutions, corruption, Chinese multinational corporations, outward direct investment

1. Introduction

How local institutions interact with multinational corporations (MNCs) has long been a subject of debate (Kwok, et al., 2006; Cuervo-Cazurra, 2016; Bahoo et al., 2020; Dau et al. 2022). The impact of Chinese investment on institutions in developing countries has caught special attention in the recent decade not only because of its growing significance but also due to the apparently unconventional business practices

of Chinese companies (Shi et al., 2017; Li et al, 2022). China's accumulated direct investment in developing countries amounted to USD 782.42 billion in 2016, showing an increase of over 20 times of the total of USD 34.97 billion in 2006. However, concern has been raised as to whether Chinese investments have caused negative social and governance outcomes. A number of studies have provided empirical evidence that the presence of projects funded by Chinese aid is associated with higher level of local corruption (Brazys et al.,2017; Isaksson and Kotsadam, 2018; Dreher et al., 2019). Surprisingly, to the best of our knowledge, no study has investigated whether FDI from China has positive or negative impact on the level of local corruption. This paper tries to employ a firm-level data set to fill this void in the literature.

2. Research design

2.1. Estimation model

2.1.1 OLS estimator

To investigate the impacts of direct investment from China on local firm's perceived level of corruption in developing countries, we employ a linear probability model in the following form:

$$Y_{i,k,c,t} = \beta_0 + \beta_1 China\ OFDI_{c,t-1} + \beta_2 X_{c,t-1} + \beta_3 C_{i,k,c,t} + \omega_c + \tau_t + \theta_{k,t} + \delta_{r,t} + \varepsilon_{i,k,c,t}$$

where *i, k, c,* and *t* denote the variable of firm *i* of industry *k* in country *c* at year *t*. Dependent variable of interest is the dummy variable taking value of one if the firm answered corruption is either as "Major obstacle" or "Very severe obstacle" to their business. The key independent variable of interest is the direct investment stock from China to country *c* at year *t-1*.

We also include a set of country-specific ($X_{c,t-1}$) and firm-specific ($C_{i,k,c,t}$) time-variant controls to capture observed heterogeneity at both country and firm level. In addition, to account for the impacts of time-invariant unobservable at the country, sector, and global macroeconomy level, we incorporate country (ω_c), year (τ_t), sector-year ($\theta_{k,t}$), and region-year ($\delta_{r,t}$) fixed effects in our OLS estimates. Including the control variables and fixed effects can help alleviate the problem of omitted variable bias. Following Chauvet and Helene (2018) and Eichenauer *et al.* (2021), we cluster all standard errors at the country-year level.

2.1.1 The Instrumental variable approach

In order to account for the endogeneity problem arising from endogenous China's outward direct investment activities, we employ the shift-share instrumental variable (IV) approach and 2SLS strategy to examine the casual impact of Chinese OFDI on corruption experience of firms operating in the host countries. Following previous studies (Nunn and Qian (2014) and Dreher *et al.* (2021), Eichenauer *et al.* (2021), and Iacoella *et al.* (2021), among others), we construct the instrumental variable by interacting an exogenous time-series with a variable whose value varies across cross-sectional units. Chinese crude

steel production is an essential input of Chinese manufacturing products and overseas direct investment projects and is mainly determined by domestic economic conditions and policy in China which can be considered as exogenous to local corruption in host country. Our approach exploits the change of Chinese crude steel production as an exogenous source of variation affecting the intensity of Chinese outward direct investment activities but not the corruption level in the host country. We interact this exogenous time series with probability of host country receiving Chinese outward direct investment flow between 2006 and 2016 as our instrumental variable. First-stage estimation of the 2SLS approach is specified as:

$$China\ OFDI_{c,t-1} = \alpha_1(\rho_c \times \log(Steel)_{t-1}) + \alpha_2 X_{c,t-1} + \alpha_3 C_{i,k,c,t} + \omega_c + \theta_{k,t} + \mu_{c,t}$$

where $\rho_c = \frac{1}{11}\sum_{2006}^{2016} I(FLOW_{c,t-1} > 0)$ is the probability that country *c* has been allocated positive inward direct investment flows from China between 2006 and 2016 and $\log(Reserves)_{t-1}$ is the natural logarithm of Chinese crude steel production at year *t-1*. The respective second-stage estimation is represented by:

$$Y_{i,k,c,t} = \beta_0 + \beta_1 \widehat{China\ OFDI}_{c,t-1} + \beta_2 X_{c,t-1} + \beta_3 C_{i,k,c,t} + \omega_c + \theta_{k,t} + \varepsilon_{i,k,c,t}$$

where $\widehat{China\ OFDI}_{c,t-1}$ is the predicated value obtained from the first-stage estimation result. In sum, by using the exogenous variation of Chinese total steel production, our 2SLS approach assess the heterogenous impact of Chinese OFDI stock on local corruption in countries with different probabilities of receiving Chinese OFDI flow throughout the study period. To prove that this instrumental variable is relevant, in the baseline analysis, we also test the first-stage estimation result with the results of under-identification and weak-identification tests. Moreover, as part of the robustness tests, we employ two additional instrumental variables in our regression analysis.

2.2 Data

To implement the estimations outlined above, we construct a dataset that combines firm level information and country-specific economic data over 99 countries between 2006 and 2016. Our firm-level data comes from the World Bank's Enterprise Survey (WBES), which collects information from a representative sample of firms in different economies. The survey covers various sets of questions, including those related to the surveyed firm's characteristics, performance, and own evaluation of local business environment. The variable of interest is one that reflects the firm's perceived level of local corruption.[1] We have a total firm-year observations of 71,121 in our study.

[1] The questionnaire contains a question coded **J30F**: "As I list some factors that can affect the current operations of a business, please look at this card and tell me if you think that ***corruption*** is No Obstacle, a Minor Obstacle, a Moderate Obstacle, a Major Obstacle, or a Very Severe Obstacle to the current operations of this establishment.". We define the dependent variable as a dummy variable taking value of 1 if the respondent thinks

Our key independent variable is outward foreign direct investment stock from China. Data of this variable is obtained from the China's Foreign Direct Investment Statistical Bulletin published by the Ministry of Commerce of China. Since 2006, China's OFDI stock has been expanded substantially. Following Eichenauer *et al.* (2021), we divide Chinese OFDI stock by the recipient county's GDP to control the economic size of the recipient country. For the whole study period, the average value of this ratio is 1.03 percent with standard deviation of 3.04 percent. Other country-level data are obtained from the World Bank's World Development Indicators.

3. Results

3.1 Baseline results

Table 1 displays our main results. As shown in Column (1) to Column (3), by incorporating fixed effects at different levels, the OLS estimators reflect the correlation between Chinese overseas investment activities and the corruption level in the recipient country. All the coefficients of Chinese OFDI stock are negative but the values of coefficient are small and only the coefficient in Column (1) is statistically different from zero.

Table 1: Main Estimation Result

	(1) OLS	(2) OLS	(3) OLS	(4) 2SLS	(5) Reduced Form
ofdi	-0.0101***	-0.00495	-0.0011	-0.158**	
	(0.00274)	(0.00324)	(0.0138)	(0.0608)	
iv_ofdi					-0.724***
					(0.206)
First Stage:					
$\rho_c \times$ chn_steel				4.577***	
				(1.017)	
Kleibergen–Paap rk LM stat.				14.490	
Kleibergen–Paap F stat.				20.261	
Observations	71,112	71,112	71,112	71,112	71,112
Firm-level Controls	Yes	Yes	Yes	Yes	Yes
Country-level Controls	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Sector-year FE	No	Yes	Yes	Yes	Yes
Region-year FE	No	No	Yes	Yes	Yes

Note: The dependent variable is the binary variable of corruption. Column (1), (2), (3), and (5) are the estimation results by using OLS regressions. Column (4) is estimated by using 2SLS estimator with the interaction term of ($\rho_c \times$ chn_steel) as the instrumental variable. All regressions are weighted by the probability weights provided by the WBES. Standard errors of all regressions are

that corruption is either a *Major Obstacle* or a *Very Severe Obstacle* to the current operation of a business and value of 0 otherwise. In our sample, 37 percent of the companies reported that corruption is either a *Major Obstacle* or a *Very Severe Obstacle*.

clustered at country-year level with the significance levels: ***p < 0.01, **p < 0.05, *p < 0.1.

To deal with the endogeneity issue and to uncover the causal effect, we run the instrumental-variable estimation and present the corresponding result in Column (4). The coefficient of the instrumental variable from the first-stage estimation is positive and is statistically significant at 1 percentage level. This strong result indicates that our choice of instrumental variable is relevant to the endogenous Chinese OFDI stock in the recipient country: countries which receive Chinese OFDI flow more frequently would have a higher OFDI stock to GDP ratio at the time when China has a higher total reserve. Moreover, the Kleibergen-Paap rk LM statistic (14.49) and Kleibergen-Paap Wald rk F statistic (20.26) reflect that our instrumental variable is less likely to commit to under-identification and weak-identification problems. From the second-stage estimation, the coefficient of predicated Chinese OFDI stock to GDP ratio is negative and statistically significant at 1 percentage level. In addition, Column (5) shows the reduced-form regression and the coefficient of instrumental variable is negative and statistically significant at one percentage level. Quantitatively, one percentage increase in the predicated Chinese OFDI to GDP ratio in the host country decreases the likelihood of local firm reporting that corruption is a major obstacle by 15 percentage.

3.2 Robustness tests

We have carried out a battery of tests to examine the robustness of our main result. We find that our main result can pass all these robustness tests, which include:

1. Falsification test. We test the validity of our instrumental variable by implementing placebo tests. We rerun the regression by replacing our baseline instrumental variable with one that consists of a cross-sectional probability of receiving Chinese direct investment flow and the time series of steel production of rest of the world (excluding China).
2. Sample Dependence. We re-run the estimation on the sub-samples of manufacturing firms, which have a total of 40,832 observations. We re-run the 2SLS regression on the sub-samples of all middle-income countries (i.e., all countries of lower-middle income and upper-middle income countries), which include a sample size of 54,668 for 77 countries.
3. Alternative instrumental variables. First, following Dreher et al. (2021), we use factor analysis technique and employ the resulting logged first factor of five Chinese production inputs (crude steel, iron, aluminum, flat glass, cement) as the component of the instrumental variable and rerun the 2SLS regression. Second, we use Chinese total reserves assets as a component of instrumental variable.

4. Conclusion

Quantitatively, one percentage increase in the predicated Chinese OFDI to GDP ratio in the host country decreases the likelihood of local firm reporting that corruption is a major obstacle by 15 percentage.

Comparing to the sizes of magnitude estimating from the OLS regressions, the estimated size from the 2SLS regression is much greater because the instrumental-variable strategy helps to account for the endogeneity problem which might confound the OLS estimations.

Overall, the main finding suggests that Chinese global investment activities can help mitigate the corruption level in the recipient country. Although the OLS regressions find little evidence, the instrumental-variable regression, which effectively accounts for the endogeneity problem, confirms that Chinese overseas direct investment can help mitigate the local corruption level in the host developing countries.

In our extended analysis on the mechanism underlying the above finding, we find that FDI from China does not influence the unofficial payment requests made by local officials, but local companies are more likely to reject such requests when they are exposed to more Chinese investment. Finally, we find that Chinese investment improved the quality of local court, which may be an explanation for the higher probability for firms to refuse payment of bribes.

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Development of Survey Items to Assess the Determinants of Personal Finance Difficulties under Covid-19 among Financial Vulnerable Groups in Hong Kong

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Development of survey items to assess the determinants of personal finance difficulties under COVID-19 among financial vulnerable groups in Hong Kong

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Extended Abstract

This study aims to identify survey items to assess the determinants of personal finance difficulties, especially the factors caused by new-normal styles of living and working under COVID-19 that could intertwine with other determinants to affect individual's financial vulnerability. Started with a literature review based on the recent lifestyle and financial behavioral changes brought by the pandemic outbreak, survey items were identified, modified and then proceed for preliminary face validity and ethical considerations checking by experts. Determinants identified from this study provide direction of future education initiatives and counselling services for financial vulnerable groups.

Keyword: Personal finance, digitisation of the economy, COVID-19 pandemic, addiction to digital technology, financial vulnerability

1. Introduction

Due to the COVID-19 pandemic epidemic and other global and local social economic upheavals, like the economic slump, business closures, job losses, and declining salaries have been widespread in Hong Kong during the past three years. More in-depth research should be done on the connections between those elements and changes in financial behavior, lifestyle, and financial conditions. Such investigations about what affect personal finance conditions under COVID-19 among financial vulnerable groups will provide direction for the counselling needs as well as the future financial education initiatives for such segments. The purpose of this study is to identify survey items to assess the determinants of personal finance difficulties with a view to develop a questionnaire, particularly the new factors brought on by COVID-19's new-normal ways of living and working that may interact with other causes.

2. Method

The development began with a literature review based on the recent lifestyle and financial behavioral changes brought by the outbreak of COVID-19 pandemic. These include how pandemic impacts on individual's financial well-being, pandemic-driven digitisation of the economy activities, addiction to digital technology and changes in financial behaviour. Also, the possible way to measure financial vulnerability is reviewed. Whether validated survey items existed, and necessary modification are explored. Face validity and ethical considerations are handled afterwards.

3. Findings and Result

3.1. Impact of the COVID Pandemic on financial well-being

COVID-19 and the associated economic downturns constitute a shock that lowers asset values and wealth, increases cash outflows, and lowers cash inflows (Achou et al., 2020; Hanspal et al., 2020; Roll and Despard, 2020, Round et al., 2020). Roll et al., 2020 has used a single item with likert scale to invite respondents to report if their financial condition changed since the start of the COVID-19 pandemic. Similar item was deployed in this survey. However, this paper proposes to add value to future research by acquiring a more in-depth understanding of how cash inflows/outflows and asset value changes before the pandemic and at the time of seeking counselling. Possible reasons of changes related to

income shock, employment status, financial emergency events, and wealth shock were identified from literatures and set as survey questions. For instance, sources of income were proposed to break down into job income, rental/investment income and pension, etc. Income shock could be due to adverse change in employment status, unable to work, etc. Financial emergency events and wealth shock could be due to health problems, call into financial scam, investment failure, etc.

3.2. Digitisation of the economy

COVID-19 has forced social contact to the minimal level, leading to socio-economic digitization in many aspects of daily life and financial management such as banking and investing, work and meetings, learning, dining and consumption. Existing literature acknowledges that there is a research gap in understanding of how personal consumption, financial and credit behaviour, attitudes, awareness, and adoption may change in relation to the development of digital technology and digital society (Idris, 2019; Pinochet et al., 2019; Shang, et al., 2021Tung, 2018). Accordingly, likert scale survey items were developed to assess the awareness of various types of digitised services and related digitised marketing messages in the most recent three years and their responses to related marketing messages during our research timeframe period.

3.3. Addiction to digital technology

Addiction is defined as impulse dependent on a habit of a specific activity or substance use that has destructive effects on social, emotional and even financial situations (Idris, 2019). Work-from home or learn-from home workstyle and lifestyle due to Pandemic has caused people to be able to spend more time on social media and digital services such as shopping, entertainment and money management in the digital economy. At the individual level, if persons are not able to resist temptation but overspending, or having a relaxed attitudes to borrowing, together with poor money management skills, could lead to problem debt (Round et al., 2020). Lam and Lam (2017) adapted the Bergen Shopping Addiction Scales to measure addictive online shopping behaviour and the association with financial literacy. We contribute by extending the research to a wider scope to cover addiction to different types of digitised services, such as digitized financial service and online entertainment.

3.4. Changes in financial behaviour

Four areas of behavioral change can be categorized by reviewing the literature: Income/savings related, expenditure related, investment related, repayment obligation related. Survey items were proposed to learn respondents' changes in related activities in a ten-point scale. Further details of each category of the behavioural changes was collected by setting related questions after referencing similar research. Examples are, if applicable, what action(s) they took to increase income, whether they were forced to sale fixed assets for liquidity purpose, where they had spent more/less, whether they had invested in new products, reasons for new borrowing, whether they had been rejected by financial institutions when apply for loans, etc. (Achou et al., 2020; Hanspal et al., 2020; Jantan et al., 2020; Moenjak, 2020; Roll et al., 2020; Round et al., 2020).

3.5. Financial difficulties

Financial vulnerability, fragility or instability are common terms used to describe people in financial problems. They refer to the inability to sustain one's own expenses due to uncontrollable factors, unforeseen expenses, or financial obligations such as a decrease in debt, wealth or income due to changes in circumstances or a combination of these (Clercq et al., 2015; Kim et al., 2016; Magli et al., 2020). The financial vulnerability of over-indebted people or households is typically assessed using the debt-service ratio ("DSR") as defined by the share of debt payments to income above a given threshold (D' Alessio and lezzi, 2013; European Central Bank, 2013; IMF, 2011; Idris, 2019; Michelangeli & Pietrunti, 2014; Thompson et al., 2017). Survey items were developed to know respondents' monthly income and repayment obligations at the time of seeking counselling as this research mainly follows the mainstream research.

3.6. Content validity, face validity and ethical consideration.

After the development processed mentioned above, a questionnaire with questions covering the necessary area of investigation is ready for pilot run. Before pilot run, survey items identified should be discussed with the collaborating NGO providing debt counselling services to finalize the draft questionnaire based on both practical and academic perspectives to ensure its content validity. In addition, expert's opinions and advice from the local financial education authority should be sought to ensure the face validity and ethical considerations of the questionnaire. After the modification, the questionnaire with questions covering the necessary area of investigation can be ready for pilot run.

4. Conclusion

The questionnaire proposed in this study has referred to validated items from the existing literatures and experts and practitioners' review and input can be explored. It can be used to investigate how pandemic, digitisation of the economy activities, addiction to digital technology and changes in financial behaviour affect the financial conditions of the vulnerable group. With data, further research will inform the financial education needs and provide direction of future education initiatives and counselling services for the vulnerable groups.

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The Growth Mechanism and Influencing Factors of "Specialized, Advanced, Differentiated, and Innovative" SMEs: An Exploratory Case Study of Shanghai HL Company

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The Growth Mechanism and Influencing Factors of "Specialized, Advanced, Differentiated, and Innovative" SMEs: An Exploratory Case Study of Shanghai HL Company

Introduction

Small and medium-sized enterprises (SMEs) are pervasive in the manufacturing sector and have made significant contributions to national economies, thus the issue of how to promote the sustainable growth and competitive advantage of SMEs has been attracting a lot of interest from researchers, policy-makers, and business managers worldwide (Terziovski, 2010). For example, Japan and Germany, two manufacturing powerhouses, launch the program of "global niche top company" and "Hidden Champion" respectively to strengthen their industrial leadership. A "global niche top company" is characterized by the leading market position in a specific niche market globally, exhibiting strategic uniqueness with innovative products or technologies. A "hidden champion" often refers to a midsize market leader that is not well known by the public but successfully blend technology with market knowledge for the closeness to customers (Simon,1992).

In comparison, China proposes encouraging "*specialized, advanced, differentiated, and innovative*" *(SADI)* companies, which represents four kinds of SMEs that the government will particularly focus on and support in the near future. It is worth noting that several differences exist between China and developed countries regarding the national strategies for enhancing the growth of SMEs. Firstly, Germany and Japan are

advanced economies with strong industrial infrastructure and slack resources for innovation, while the past catch-up of latecomer countries like China has concentrated mostly in traditional industries in which low labor cost is a major driver of economic success. The heterogeneous nature and magnitude of firms' resourcefulness can be a consequential source of advantage for SMEs (Zahra, 2021). Secondly, given that China's SADI policy plays a pivotal role in respond to the de-globalization and technological decoupling (Li et al., 2021), the changing conditions of technological changes, market demands, government involvement, and public policy may influence the growth path of SADI firms. As such, different contextual variables that influence decision making about resource allocations and innovation should be identified and investigated. Thirdly, most SADI firms in China are in the early and rapid development stage of their lifecycles, while hidden champions in Germany and Japan often have a history over hundreds of years, positioning in a relative mature and stable stage.

While acknowledging the above heterogeneity of SMEs and external environment, prior studies often overlook the contextual factors that could affect the types and values of resources that SMEs in emerging economies need or have. Typically, such SMEs would not have yet accessed or developed need resources (e.g., core knowledge) in the beginning. Further, existing research has given little attention to the management of resources dynamics, the real arena of firm growth and a key antecedent of SMEs' potential strategic advantage. Therefore, in this study, regarding the growth of Chinese SADI firms, three questions are pertinent:

1. Why do SMEs in China follow a strategic logic of SADI in their development

process?

2. How can SMEs create and sustain competitive advantages by integrating the four characteristics of SADI?

3. What are the unique implications of SADI in China?

Therefore, this study extends relevant literature by providing an explanation for the process and mechanism of resource orchestration during SADI firms' growth. First, it deepens our understanding of the novel SADI concept by illustrating the inductive elements of four characteristics of SADI and their interrelationships. Second, this study adds to the literature on the impact of unique contextual factors on SMEs' growth by investigating the longitudinal development process of a SADI firm in emerging economies. Third, combining insights from resource-orchestration view and the research on hidden champions, we contribute to the prior studies by highlight the dynamic resource management of SMEs and its relationship with competitive advantage creation.

Literature Review

Research on hidden champions and SMEs growth

Hidden Champions are a subgroup of such Mittelstand firms and world market leaders of niche products (Simon,1992), which often have key technical resources and will establish close cooperation and synergy with customers (Toften and Hammervoll 2010; Audretsch et al. 2018). Among the hidden champions in Germany and many developed countries, they tend to have monopolistic technological advantages, highly specialized capabilities, specific human capital and close-customer relations (Witt,

2015, Audretsch et al.,2018; Audretsch et al.,2021).

While most of the research in the field of hidden champions still focuses on niche companies in developed countries, SMEs in Asian emerging economies is growing fast which have potential to become hidden champions(Li and Wu,2020). Enterprises in these emerging economies such as China and India have broader market demand and more constrained global market entry condition, which lead to different international strategy (Zhao et al.,2021). And the dynamic institutional transformation in Asian emerging economies shape more complicated environment which reconfigure corporate's governance characteristics, competitive strategies and social network (Li et al.,2015). The institutions voids in the process of system transformation has induced some opportunism and unequal competition behaviors (Boso et al., 2019; Zhang et al., 2019). These institutional environment affects are not key concern in the hidden champion literature but plays important role on the growth paths for Asian SMEs to be hidden champions.

Organization Resource orchestration

The orchestration of enterprise resources is a critical process (even more important than the resources and capabilities themselves) (Sirmon et al., 2011), especially for resource-constrained SMEs. By effectively orchestrating resources and capabilities, companies can seize opportunities to build competitive advantage (Amit and Han, 2017). The response of resource orchestration to corporate strategies is mainly reflected in the breadth (resource orchestration across the scope of the firm), life cycle (resource orchestration at various stages of firm maturity), and depth (resource orchestration

across levels of the firm) (Ketchen et al., 2007; Sirmon et al., 2011).

Organization resource orchestration is closely related to managers action, including the comprehensive process of structuring, bundling, and leveraging the firm's resources with the purpose of creating value for customers and competitive advantages (Sirmon et al.,2011). Top managers differ in their resource management abilities, and these differences matter to firm outcomes (Holcomb et al.,2009). The synergy of the institutional environment and organizational strategy affects the effect of resource orchestration, for example, resource investments that deviate from industry norms negatively affect performance unless that deviation is synchronized with an appropriate leveraging strategy (Sirmon and Hitt, 2009).

Structuration theory

Corporate growth and competitive advantage building is a complex process and research based on structuration theory provides a holistic view (Gidden,1984). It recognizes the synergy of institutional environmental structure and corporate action (Luo, 2006; Zhang,2021). Managers need to focus on how to create change by exploring opportunities in the external environment while at the same time exploiting those opportunities to sustain value creation across time (Hitt et al., 2011).

Drawing on the three theoretical constructs – hidden champion, resource orchestration and structuration theory – provides the basis for our conceptual model (Fig. 1). In this model, we view organizational growth as a resource-capability building development process, and focus on how to orchestrate the organization resources for adapting the external institutional environment and internal strategies to promote

organizational growth.

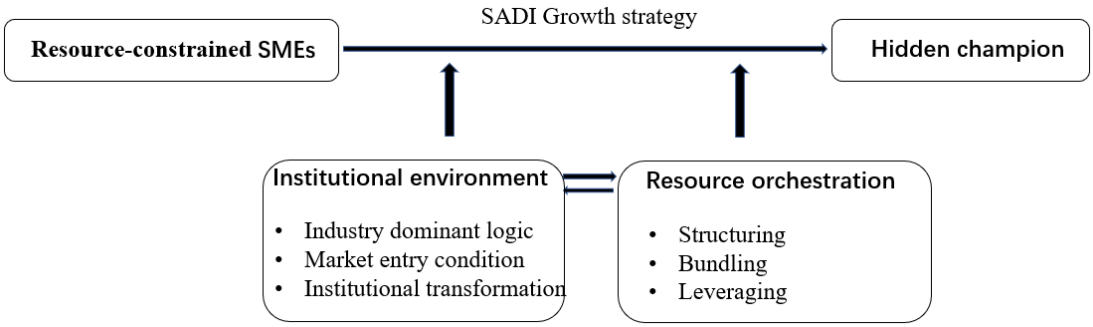

Figure 1. Research conceptual model

Research Methodology

Research design and case selection

Since this research question focuses on the process of organizational growth and evolution which emphasizes the dynamic development process, the process research method represented by Langley (1999) is particularly suitable, and there are few related researches on SADI enterprises, using exploratory longitudinal single case study method is an applicable research method (Yin, 2013). We also adopted the principle of purposeful sampling, carried out case selection and research design from the research topic (Saunders et al., 2010). In making our final selection, we ultimately chose the Shanghai HL Company as our focus company, intending to analyze its growth and development process since its foundation in 1998.

Shanghai HL is a veteran supplier in the auto parts processing industry, and is one of the first batch of local parts supply chain enterprises established by multinational automobile groups in China in the 1990s to promote localization supply chain construction, as well as one of the first batch of General Motors North American teams stationed in China. They boast achievements such as the joint design and development of a series of engine block cylinder head processing and manufacturing processes,

obtaining the largest domestic automobile group subordinate first-class supplier certification and procurement, and is still providing engine manufacturing technology solutions for SAIC-GM. Therefore, from the establishment of the company to the success of the transformation of SADI, the history of this company has seen the localization of multinational companies, the growth of independent brand vehicles, and the rapid rise of new energy vehicles in the development of China's automotive industry across recent years. As such, we determined this to meet the requirements of longitudinal single case studies, thereby making it a theoretically interesting case for us to study (Yin, 2013).

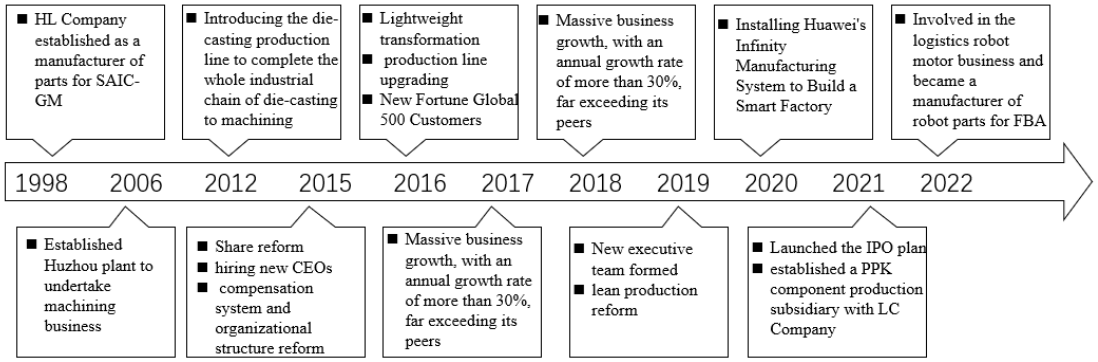

Figure 2. Timeline of HL Company Development

Data collection

We started to collect data in late 2020 to June 2022.and e established close ties with our focus company. Therefore, during the process of data collection, we have been able to collect enterprise-related data in a comprehensive manner, including a readily available access to internal documents, archives, and so on. We have established a robust database of cases through use of in-depth semi-structured interviews within the enterprise, and semi-structured interviews with related enterprises, as well as participant observation, internal second-hand information, external news information, and book materials.

Interview data

We conducted a total of 33 formal interviews, each interview lasting between 1-2 hours. Our interview outline covered the nine key themes of enterprise development, namely the basic situation of enterprises, external environmental policies, industrial chain cooperation and competition, specialization and diversification, lean production and lean management, specialization and differentiation, R&D and innovation, resources and capabilities, culture and leadership.

Table 1. Interviewee List

Organization	Relation with HL	Position	Interview length
HL Company	——	• TMT(including CEO\Deputy CEO\Managers of departments,etc) • Core employees	16 hours
LC Company	Partners & downstream manufacturers	• General Manager of EPS Business Unit • Project Director of EPS Business Unit, • R&D Director of EPS Business Unit, • Director of Sales, • Sales Key Account Manager,	6 hours
LJ Company	Upstream suppliers	• General Manager • Project Director • Technical Manager Department Manager	6 hours
CX Company	Peer competitor	• Project Manager • Product Manager • Production Manager • Sales Administrator • Merchandising Manager	5 hours

Secondary data collection

The purpose of conducting second-hand data collection is to verify the information triangle. We intend to sort out the key information collected through the interviews and match it with second-hand data to ensure that the key information is held to a degree of accuracy. the second-hand information was derived from internal circulation documents of the sample enterprises and external authoritative media, and was subsequently submitted to the public relations personnel of the sample enterprise for verification and confirmation. From the perspective of collection time, scope, and object, we have made certain that the research data contained in this paper are factually correct, comprehensive, and was obtained within sufficient time span. Therefore, the reliability of this study can be guaranteed and can form a solid foundation for further research and analysis.

Table 2. Overview of Data Sources

Data Source		Collection Details and Date	Purpose
primary data	Interviews HL Company's TMT and key employees	16 formal (semi-structured) interviews and numerous informal in-depth communication	The HL Company's (our focus company) interviews allow us to go back in time and inquire about past situation and decisions to better understanding our focus company's development.
	Interviews LC Company's TMT	6 formal (semi-structured) interviews and numerous informal in-depth communication	The LC Company's interviews allow us to understand the auto-industry situation and the cooperation/supply relationship with our focus company
	Interviews LJ Company's TMT	6 formal (semi-structured) interviews and numerous informal in-depth communication	The LJ Company's interviews allow us to understand the auto-industry situation and the supply relationship with our focus company
	Interviews	5 formal (semi-structured)	The CX Company's interviews

	CX Company's TMT	interviews and numerous informal in-depth communication	allow us to understand the auto-industry situation and the co-opetition relationship with our focus company
secondary data	HL company's internal documents	30 documents, including financial audit report, business development history, investment projects and data, asset and equipment data, meeting minutes, TMT's summary report at the staff meeting, TMT's work summary report	In-depth understanding of enterprise information, cross-verification with interview information.
	Corporate website information	9 documents, including company news, major event reports	Search for external information of the enterprise and cross-verify with the internal information of the enterprise
	News reports	3 documents, including company news, major event reports	Search for external information of the enterprise and cross-verify with the internal information of the enterprise

Further work and expected findings

We are currently in the process of coding data and building the theoretical model, and expect to finalize our manuscript in the early beginning of 2023. We hope to build a process model that incorporates the unique contextual factors as well as the underlying resource management mechanisms to explain the rapid growth of SADI firms in emerging economies, thus developing a deeper understanding of the different trajectories of hidden champions in developed and emerging economies.

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Business Group Affiliation and R&D Investment:

The Mediating Role of External Capital Market

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Business Group Affiliation and R&D Investment:

the mediating role of external capital market

Abstract: The impetus of innovation of business group in emerging economies increasingly comes into the spotlight, while less attention has been paid to the external capital market. Combining signal theory and institutional theory, this paper examines that signal effect of business group to obtain more banking resources which is beneficial for R&D investment of business group members. Data of the listed Chinese manufacturing companies from 2009 to 2019 supports our empirical study. Specifically, affiliation with business group is beneficial for R&D investment. In addition, members of business group have more access to bank loans and this is also a mediator to prompt focal firms' R&D investment. Finally, when regional intermediary organization is mature or regional credit market is developed, it reduces signal effect of business group affiliation to access to banking resources.

Keywords: business group; regional credit market; regional intermediary organization;

China, R&D investment; mediating;

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Digital Tax Enforcement and Outward Foreign Investments to Tax Havens

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大数据税收征管和企业避税天堂投资

摘要：基于“金税三期”应用的准自然实验，本文以 2009 年-2019 年中国 A 股非金融类上市公司年度数据为样本，运用双重差分法研究了大数据税收征管对企业“避税式”对外直接投资的影响。研究发现，“金税三期”显著降低了企业避税天堂直接投资的数量与比例。基于避税天堂投资的动因，机制检验发现，“金税三期”对企业避税天堂直接投资的影响渠道包括：增强税务部门发现国际避税的能力，提升企业融资能力和改善区域制度环境。进一步研究还发现，“金税三期”对企业避税天堂直接投资的抑制效应主要体现在弱政治关联企业，管理层持股较多企业和外部监督水平较弱企业，并在不同行业间存在异质性。本文拓展了大数据税收征管背景下我国企业对外直接投资的研究，阐明了大数据技术在抑制我国企业海外避税中的作用，并针对性地提出政策建议。

一、引言

2020 年中国对外直接投资总额 1537.1 亿美元，首次成为全球第一大外国直接投资流出国。但从直接对外投资流向地区来看，我国的对外投资大部分流到了英属维京群岛等“避税天堂”（刘志阔等，2019），这些国家或地区通常没有实体经济产业，以低税率优势吸引大量海外投资。在现有以避免双重征税为原则的国际税收治理体系下，“避税天堂”的存在容易产生双重不征税，从而导致跨国企业将利润转移到避税地，造成应税利润的消失，侵害国际税基。因此，“避税天堂”是经济合作与发展组织（OECD）遏制税基侵蚀和利润转移计划的主要规制对象（Ting，2014）。

随着税制改革的推进，中国政府通过引入大数据技术不断“创新监管方式”。2013 年到 2016 年，国税总局逐步推动“金税三期”大数据系统从部分省市分批试点到全国 100%正式上线覆盖，实现了税收征管的大数据建设。与传统的经验税收征管体系相比，基于“金税三期”的大数据税收征管可以利用多维数据源相互印证，把我国税

收征管体制从“人管人”模式转变为“程序管人”的管理模式，把税务数据分析方法从单一的经验分析转变为大数据分析为主（孙雪娇等，2021）。“金税三期”虽以增值税为主要监管税种，但因数据的互相印证和“程序管人”模式的应用，也会对其他税种产生一定的监管效果，可能导致企业过往的一些避税手段失效。基于信息不对称利用避税天堂进行全球避税是跨国企业重要的避税手段，那么在大数据税收征管背景下，企业“避税式”的海外投资是否会受到影响？

二、研究假设和实证论证

2.1 研究假设

OECD 把“避税天堂”定义为对应纳税所得征收很低税率或完全免税的国家或地区，纳税人在该国家或地区获得的利润缺乏有效的信息分享，当地的规章制度也缺乏透明度，且当地对投资未有实质性经营的要求（OECD，1998）。企业避税天堂海外投资一般有三种动机（Buckley et al.，2015；Jones and Temouri，2016；肖立晟等，2022）。一是寻求避税，二是克服国内资本市场的不完善，三是制度套利。

“金税三期”工程的应用影响了中国企业对避税天堂进行投资的动机，即同时减少了中国企业利用避税天堂 OFDI 进行关联交易从而获取避税利益、通过海外子公司获取企业经营资金来源和克服中国制度失衡的三大动机。首先，“金税三期”工程应用的“征税效应”减少了中国企业利用避税天堂 OFDI 进行关联交易从而获取避税利益的动机。依托大数据技术，“金税三期”工程应用能减少企业关联交易（刘慧龙等，2022）。跨国企业利用避税地关联企业进行关联交易（譬如高价获取原材料或低价转让商品）同样也在“金税三期”工程的监管之内。其次，“金税三期”工程应用的“桥梁效应”拓宽了我国企业融资渠道，减少了其利用避税天堂 OFDI 获取更多资金来源的动机。企业涉税信息质量提升不仅降低了政企之间的信息不对称，也间接打通了融资方与资金方之间的信息不对称壁垒，产生了“桥梁效应”（蔡昌等，2021），从而在一定程度上提升了企业的融资能力，减少了企业利用避税天堂 OFDI 获取更多资金

来源的动机。最后，“金税三期”工程的“制度提升效应”减少了中国企业利用避税天堂 OFDI 克服中国制度失衡的动机。基于以上分析，本文得到如下假设：

假设 1: 大数据税收征管通过征税效应、桥梁效应与制度提升效应，减少中国企业对“避税天堂”的海外直接投资。

2.2 实证论证

2.2.1 模型假设

“金税三期”工程在各省份、分年份逐步实施的特点使其具有准自然实验的性质。本文利用“金税三期”工程实施在时间和空间两个维度上的差异，构建“双重差分”模型（difference-in-difference），识别大数据税收征管对企业对外直接投资行为的影响。本文构建的实证模型具体如下：

$$Y_{it} = \beta_0 + \beta_1 Digital\ System_{it} + \beta_2 Controls_{i\ (t-1)} + \tau_t + \delta_i + \varepsilon_{it}$$

核心解释变量$Digital\ System_{it}$为虚拟变量，表示对“金税三期”工程实施情况的度量。当企业 i 所在省份未上线“金税三期”工程时，$Digital\ System_{it}$取值为 0；当企业 i 所在省份上线“金税三期”工程之后，$Digital\ System_{it}$取值为 1。变量 $Digital\ System_{it}$等同于传统双重差分模型中的交互项，其系数β_1是本文最为关注的系数，度量了由“金税三期”工程实施所带来的大数据技术的应用对企业对外直接投资影响的净效应。$Controls_{i\ (t-1)}$为控制变量，本文根据既有研究模型控制了可能影响企业对外直接投资的变量。

2.2.2 样本选择

本文选取中国沪深 A 股上市企业 2009-2019 期间年度数据为样本，并对数据集做如下处理：（1）剔除金融行业公司样本；（2）剔除 ST、*ST 和在研究跨度期间退市的公司样本；（3）剔除在样本期间内从未进行过海外投资的公司样本；（4）剔除存在变量缺失值的公司样本。数据筛选后，本文共获得有效样本 14339 个，包含 2041 个样本企业。本文的样本数据和企业特征数据来自国泰安数据库（CSMAR）。“金税三期”

工程上线数据来自国税总局和各省市国家税务局网站公告。

2.2.3 基本回归结果

本文使用双重差分模型，考察由大数据税收征管系统的应用对企业对外投资行为的影响。回归结果显示，“金税三期”虚拟变量$Digital\ System_{it}$的系数在第（1）至第（3）列中均不显著，但在第（4）至第（6）列的结果中，且$Digital\ System_{it}$的系数在 1%的水平上显著为负。结果表明，“金税三期”工程的上线，对中国上市企业整体的对外直接投资行为没有显著影响，但可以显著降低企业在“避税天堂”国家/地区进行投资的行为。该基准回归结果证实了本文的主要研究假设。同时，本文将双重差分模型结合事件研究法，检验在政策发生前，处理组和控制组在对外直接投资行为上是否满足平行趋势假设，检验结果证实本文基准回归结果满足平行趋势假定。

2.2.4 稳健性检验

为了排除“营改增”政策对本文基准回归结果的干扰，本文借鉴张克中等（2020）的做法，使用两种方法进行处理，一是将服务业企业从样本中删除，对剩下的样本重新进行基准回归，二是进一步在基准回归方程中控制企业增值税、营业税的整体税负，以控制“营改增”政策在企业税负方面的影响。回归结果显示剔除服务业企业样本后和在控制企业整体税负后，基准回归结论依旧成立。

本文在使用 OECD 名单的基础上，在稳健性检验部分还使用美国“停止滥用税收天堂法案”名单和 Hines（2010）名单进行稳健性检验，基准回归结论依然成立。

2.2.5 机制检验

本文进一步研究分析“金税三期”工程影响企业对外投资行为的传导机制。研究结果发现，“金税三期”工程上线，带来的大数据税收征管系统的应用，通过“征税效应”、“桥梁效应”和“制度提升效应”三种机制影响企业对避税天堂的直接投资行为。另外，本文还针对企业是否具有政治管理，内部治理环境治理和不同行业进行了进一步的异质性讨论。

三、结论

本文运用双重差分法，以“金税三期”工程应用作为外生的准自然实验，基于企业对外投资的微观数据，研究发现，大数据税收征管并未明显改变我国对外投资总数量，但显著降低了企业避税式对外直接投资比例，改变了我国企业对外直接投资的目的。在机制方面，本文发现大数据税收征管不仅能通过增强税收征管能力降低了企业避税天堂投资的避税动机，同时也通过缓解“信息不对称”问题提升企业融资能力和改善区域制度环境抑制了企业避税天堂投资的融资动机和制度套利动机。且进一步检验也从政治关联、内外部治理环境进一步证明了大数据税收征管对本身具有较强避税动机的企业的抑制作用更加明显。此外，大数据税收征管对企业投资避税天堂的抑制作用具有行业异质性，在市场集中度较低的行业和高技术密集型的行业更为显著。本文不仅丰富了大数据技术应用经济后果、企业避税和对外直接投资区位选择的相关文献，还为政府大数据监管系统对实体企业行为的效应提供了来自中国的微观证据，并拓展了税收征管和对外投资互动关系的相关理论。在全球严厉打击跨国企业规避纳税义务的新形势下，大数据税收征管对规范企业对外投资和减少本国企业海外投资的税务风险具有至关重要的意义。

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Cultural Product Adaptation in International Markets:

A Study of Chinese Online Novels

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Cultural Product Adaptation in International Markets: A Study of Chinese Online Novels

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Extended Abstract

Cultural products are among the most rapidly growing sectors worldwide and have become major drivers of the economies of developed as well as developing countries. Using the data of Chinese online novels translated and distributed via webnovel.com to foreign readers from 2018 to 2021, our study examines how adaptations of different aspects of a cultural product affect its foreign performance. Results show that novel title adaptation positively while novel content adaptation negatively affects foreign performance. Meanwhile, cultural specificity and initial product popularity respectively weaken the positive relationship between novel title adaptation and foreign performance, while strengthen the negative relationship between novel content adaptation and foreign performance. Our study contributes to literature on cultural product and adaptation in international markets, as well as advances current knowledge on cultural specificity and product popularity in the cross-cultural research. In addition, it also provides several valuable managerial implications for firms and marketers engaged in international

businesses of cultural products.

Keyword: Cultural product adaptation, Foreign performance, Contingency perspective, Chinese online novel

1. Introduction

In 2015, “Panlong (盘龙)”, a Chinese online novel, was translated by RWX, a Chinese American obsessed with Chinese martial arts culture, and introduced into foreign social networks, which triggered a reading boom for foreign readers and was at the top of the reading list for a long time. As of 2020, the scale of these readers in foreign markets has reached 83.161 million. The translated Chinese online novel is a typical cultural product (Holbrook & Hirschman, 1982). Capitalized US$2,250 billion and nearly 30 million jobs worldwide, cultural products are among the most rapidly growing sectors worldwide and have become major drivers of the economies of developed as well as developing countries (UNESCO, 2015). In particular, economic globalization and the development of digital technologies further accelerate the dissemination of cultural products around the world on an unprecedented scale (Gao et al., 2020; Peltoniemi, 2015). And foreign markets are increasingly important for cultural product producers to grow their businesses.

However, cultural product deeply rooted in one country’s culture may not be easily understood in another (Craig et al., 2005; Hanson & Xiang, 2011) due to the existence of culture-specific factors and differences in language, history, and tradition of between local and foreign markets. Thus, producers must consider selecting appropriate market adaptation strategies for the cultural product to better appeal to foreign consumer tastes and preferences to achieve good performance (Cavusgil & Zou, 1994; Westjohn & Magnusson, 2017). It's the same for novels. How to adapt a novel is vital to excellent foreign performance in international markets.

Adaptation strategy is defined as a firm’s consistent and planned activities to meet the preferences and values of local consumers (Cavusgil & Zou, 1994). The field of international business has paid

particular attention to adaptation and its link with foreign performance since the publication of Levitt's (1983) article on the globalization of markets (Cavusgil & Zou, 1994; Magnusson et al., 2013; Mandler et al., 2021). However, findings regarding adaptation strategies impact on performance remain mixed and inconclusive (Mandler et al., 2021). Recent researchers in the area of international marketing have increasingly applied contingency perspective to further understand when and where adaptation leads to greater performance (Xu et al., 2006; Samiee & Chirapanda, 2019). The choice of adaptive strategy or not depends on a series of contingency factors such as international market characteristics, company background, and product features (Birnik & Bowman, 2007; Calantone et al., 2004 ; Cavusgil et al., 1993; Leonidou et al., 2002).

Prior international marketing research has paid more attention on noncultural products (e.g., clothing, electronics, appliances, automobiles) and largely ignored cultural products. The experiential nature of cultural products may make outcomes of adaptation strategies different (Elberse & Eliashberg, 2003; Liu, 2006). Meanwhile, most research that explores moderators on the connection effect based on contingency perspective, mainly focus on environmental or enterprise factors, with few product characteristic factors. Finally, in terms of methodology, few studies use market-level data in the real-world to reveal the impact of adaptation strategies on foreign performance to increase the objectivity of research conclusions.

To fill these gaps, we, collecting data about Chinese online novels translated and distributed via webnovel.com to foreign readers from 2018 to 2021, examine how different adaptation strategies of such cultural product affect its foreign performance in international markets. The theoretical contributions are as follows. First, our study contributes to literature on cultural products that have been largely ignored by scholars in the field of international marketing. Second, our study contributes to literature on adaptation in international markets, providing new insights into the outcomes of adaptation mixed and inconclusive findings in international business. Third, our study advances current knowledge about cultural specificity and product popularity in the cross-cultural research. In addition, our study also provides several valuable managerial implications for firms and marketers engaged in international businesses of cultural products.

2. Literature and Hypothesis

As a typical experiential cultural product, the quality of an online novel can be judged only through usage (Holbrook & Hirschman, 1982). Novel title, as one of the important text elements of the cover, is the key product information that foreign readers first come into contact with when a novel enters the international market. But, even a title, which contains some of the novel's storyline or characters, can only provide part of the "flavor". The content of a novel is usually the key selling point for a novel (Eliashberg et al., 2007; Toubia et al. 2019). Thus, we capture adaptation strategies of Chinese online novels on foreign performance from the two aspects of title and content. Previous research has shown that the popularity of a cultural product rests on the coexistence of both novelty and familiarity in the process of consumer experience (Alvarez et al. 2005; Cillo et al. 2010). Thus, the title and content of novels should also take into account these two aspects when introduced into foreign markets.

Novel title adaptation and foreign performance. The large amount of novels on the online platforms causes the time window for each novel to be exposed to readers is very short. The novel title is usually so short and contains less useful information that it may not be easily understood and be valued to a lesser extent by foreign readers who lack the cultural background and knowledge needed for a appreciation of the novel (Lee, 2006). If the title is not immediately understood by readers and fails to make a good first impression on them, there will be no chance to keep them engage with the novel. Thus, given the short time window available, it should maintain a higher level of familiarity for foreign readers to understand the novel title. Adapting novel titles that aims to bridge domestic and foreign values, traditions, and preferences (Sasaki et al., 2021), can make readers feel more familiar and easier to understand the novel. Therefore, we propose the following hypothesis:

Hypothesis 1: Title adaptation of a novel is significantly positively related to its foreign performance in international markets.

Novel content adaptation and foreign performance. The majority of foreign readers who like

Chinese online novels are young - over 60% of readers under the age of 35 and have a college education[1]. Previous research has shown that young individuals are driven by the desire to seek and learn the lifestyle and behavioral patterns of other cultures (Craig et al., 2005). "Variety seeking" and "learning" motivations could induce them to experience unfamiliar cultural products (Ratner et al., 1999; Wang et al., 2020). Meanwhile, compared with the novel title, novel content has a longer time window to be exposed to foreign readers. It allows them more time to understand the content of the novel. Many foreign readers like to experience authentic Chinese novels, in the process they can learn about mysterious oriental culture. They may prefer original content when in-depth reading novels. Therefore, we propose the following hypothesis:

Hypothesis 2: Content adaptation of a novel is significantly negatively related to its foreign performance in international markets.

The moderating effect of cultural specificity. For cultural products, cultural specificity reflects "the extent to which a cultural product typifies a specific culture" (Kim & Jensen, 2014: 1370). For novel title, cultural specificity enhances the novelty, but reduces the familiarity, which further increases the difficulty for foreign readers to quickly understand the title in a short time window. Thus, it tends to weaken the positive effect of novel title adaptation that aims to help readers quickly understand and make further reading decisions. For novel content, cultural specificity adds more novelty to foreign readers. These culture specific elements not only add no barriers to understanding and experiencing the novel content, but instead broaden the distinct national styles and enrich expressive techniques of a novel, creating a fresher experience for foreign readers and satisfying their "variety seeking" demands (McAlister & Pessemier, 1982; Ratner et al., 1999). Thus, when a novel is highly culturally specific, the positive effect of keeping the content original is strengthened. In turn, the relationship between novel content adaptation and foreign performance becomes more negative. Therefore, we propose the following hypothesis:

[1] iResearch, 2021. "Research Report on Chinese Online Novels Going Overseas". https://www.iresearch.cn

H3a: The positive effect of title adaptation of a novel on its foreign performance in international markets is weaker when the degree of cultural specificity is high.

H3b: The negative effect of content adaptation of a novel on its foreign performance in international markets is stronger when the degree of cultural specificity is high.

The moderating effect of initial product popularity. Compared with less popular novels, popular novels are discussed more frequently, and thus foreign readers are exposed to them repeatedly (Zhu & Zhang, 2010), which increases their familiarity with these products. For novel title, high initial popularity increases foreign readers' familiarity with it. But at the same time, they may feel that the novel title lacks novelty under the perception of excessive familiarity, ultimately leading to them not being attracted. In this case, the positive effect of adapting novel titles to provide foreign readers with easy-to-understand "hints" is weakened. That is to say, initial popularity negatively moderates the effect of title adaptation on foreign performance. On the contrary, for novel content, high initial popularity further increases foreign readers' familiarity under the premise of keeping the content original that aims to provide them with a level of novelty. The return will be a higher willingness to read it. In this case, the positive effect of keeping the novel content original is strengthened. In turn, the effect of adapting the novel content is weakened. Therefore, we propose the following hypothesis:

H4a: The positive effect of title adaptation of a novel on its foreign performance in international markets is weaker when initial product popularity is high.

H4b: The negative effect of content adaptation of a novel on its foreign performance in international markets is stronger when initial product popularity is high.

3. Method and Results

Research Context and Data

Statistics show that China has successfully distributed more than 10,000 online novels overseas by the end of 2020, and the scale of foreign readers has reached 83.161 million, which has formed a head effect in overseas markets. The Chinese online novel industry, therefore, is an appropriate setting in which

to test our theoretical arguments about international marketing strategies of cultural products. We chose data from Webnovel (www.webnovel.com), launched in 2017 and the largest overseas platform for Chinese online novels, which allowed us to gather a representative set of translated and distributed novels. We assembled a data set that combines detailed textual data and personnel information from the webnovel platform. The final baseline sample includes 212 online novels.

Measures

Foreign performance of cultural product. We capture the logarithm of foreign audiences' view number for each novel to measure foreign performance of the novel in international markets (Soda et al., 2008; Wang et al., 2020). *Title adaptation*. We measure the name adaptation by rating whether there are changes between the translated English novel name and the original Chinese novel name (1= "adaptation, " and 0="no adaptation") (Alashban et al., 2002; Gao et al., 2020). *Content adaptation*. For each chapter, 1 was coded if there were some changes between the translated English novel content and the original Chinese novel content, and 0 otherwise. Subsequently, the number of different chapters listed was summed. Following Wu and Zhu (2022), we only coded the first 5 chapters since each novel has hundreds or thousands of chapters. *Cultural specificity*. We develop a dummy variable for cultural specificity that equals 1 for Xuanhuan, Xianxia, martial arts, history, or ancient romance novels and 0 for other novel genres. *Initial product popularity.* We measure the initial product popularity by the number of foreign readers reviews and replies for each novel within the first two weeks after it is upload to the platform (Jiang & Chung, 2021; Zhu & Zhang, 2010). And we also controlled for a number of different novel-level and writer-level characteristics that may affect the export performance.

Results

The results of logistic regressions show that title adaptation related positively (Model 1, $\beta = 0.320$, $p < 0.05$) and content adaptation related negatively (Model 2, $\beta = -0.075$, $p < 0.05$) to foreign performance of Chinese online novels, which supported *H1* and *H2*. In addition, the interaction term of title adaptation and cultural specificity was negatively significant (Model 3, $\beta = -0.563$, $p < 0.1$), and the interaction term of content adaptation and cultural specificity was also negatively significant (Model 4, β

= -0.143, $p < 0.05$). Hence, *H3a* and *H3b* are supported. And the interaction term of title adaptation and initial product popularity was negatively significant (Model 5, $\beta = -0.168$, $p < 0.1$), and the interaction term of content adaptation and initial product popularity was also negatively significant (Model 6, $\beta = -0.020$, $p < 0.01$). Hence, *H4a* and *H4b* are supported.

4. Discussion

Theoretical Implications

This study makes several contributions. First, our research contributes to literature on cultural products. Prior research on adaptation in the field of international marketing has paid particular attention on non-cultural products (Gao et al., 2020; Mandler et al., 2021). Focusing on the exporting of Chinese online novels, a typical experiential cultural product, we broaden the scope of product contexts in the field of international marketing. Second, our research contributes to literature on adaptation in international marketing. This study confirm that two product characteristics moderate the effects of adaptations in international markets, which provides new insights into the contingency factors for the effects of cultural adaptation strategies. In addition, our research advances current knowledge on cultural specificity and product popularity.

Managerial Implications

Our study also offer several valuable managerial implications for firms and marketers engaged in international businesses of cultural products. First, firms or marketers should consider multiple aspects of the cultural product when making adaptation strategies: (1) adapting the title to make consumers easier to understand within a shorter time window; (2) maintaining the original content to satisfy consumers seeking variety and novelty. Second, firms or marketers engaged in the export of cultural products should maintain the original state of the novel, both in title and content, when both cultural specificity and initial product popularity are high.

Limitations and Future Research

As may be expected, our research is not without limitations. First, the relationship between

adaptation of cultural products and foreign performance may also be affected by other product characteristics. We hope that our research stimulates more future studies to investigate other boundary conditions for the effects of cultural product adaptation on foreign performance. Second, the measurement of content adaptation may be slightly biased. We hope that more scientific measurement methods using advanced computer technology could be designed in future research to further confirm our findings.

Table 1. Regression results for effects of title adaptation and content adaptation on export performance of Chinese online novels

Dependent variable Foreign performance	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Control variables						
Audience	-1.174***	-1.314***	-1.193***	-1.177***	-1.011***	-1.176***
	(-5.382)	(-6.195)	(-5.494)	(-5.588)	(-5.367)	(-6.284)
Number of tags	0.123***	0.129***	0.118***	0.130***	0.119***	0.123***
	(8.210)	(8.955)	(7.841)	(9.149)	(8.338)	(9.107)
Novel age	0.243**	0.237**	0.263**	0.231**	0.244**	0.220**
	(2.255)	(2.254)	(2.466)	(2.315)	(2.374)	(2.179)
Length of novel	1.013***	1.002***	1.011***	0.974***	0.889***	0.877***
	(8.288)	(8.029)	(8.480)	(8.033)	(8.103)	(7.951)
Writing time	-0.247**	-0.199*	-0.269**	-0.231**	-0.107	-0.089
	(-2.368)	(-1.862)	(-2.576)	(-2.044)	(-1.176)	(-0.985)
Novel diversity	0.024	0.016	0.016	-0.005	0.016	0.007
	(0.383)	(0.256)	(0.257)	(-0.078)	(0.261)	(0.116)
Number of novels	-0.062	-0.065	-0.082	-0.045	-0.024	-0.031
	(-0.535)	(-0.584)	(-0.717)	(-0.390)	(-0.258)	(-0.334)
Home-market performance	-0.034	-0.026	-0.032	-0.033	-0.041	-0.034
	(-1.095)	(-0.827)	(-1.035)	(-1.107)	(-1.550)	(-1.194)
Novel genre	Yes	Yes	Yes	Yes	Yes	Yes
Main effects						
Title adaptation	0.320**		0.261*		0.209	
	(1.981)		(1.729)		(1.388)	
Content adaptation		-0.075**		-0.071*		-0.066**
		(-2.028)		(-1.926)		(-2.012)
Interaction effects						
Cultural specificity			0.147	0.206		
			(0.977)	(1.385)		
Initial product popularity					0.274***	0.219***
					(7.218)	(7.713)
Name adaptation x Cultural specificity			-0.563*			
			(-1.788)			
Content adaptation x Cultural specificity				-0.143**		
				(-2.043)		
Name adaptation x Initial product popularity					-0.168***	
					(-2.929)	
Content adaptation x Initial product						-0.020*

popularity						
						(-1.859)
Constants	11.639***	11.632***	11.632***	11.782***	10.875***	11.276***
	(13.308)	(13.443)	(13.417)	(14.032)	(12.705)	(14.013)
Adjusted R^2	0.696	0.696	0.700	0.703	0.766	0.763
F	27.703	27.116	24.675	24.212	55.093	55.649

Note. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

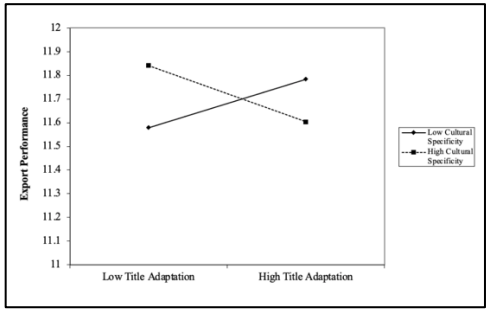

Figure 2a The interaction effect of title adaptation and cultural specificity

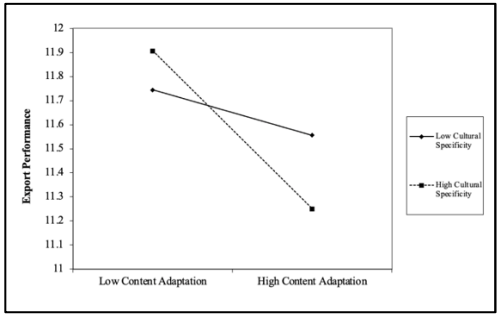

Figure 2b The interaction effect of content adaptation and cultural specificity

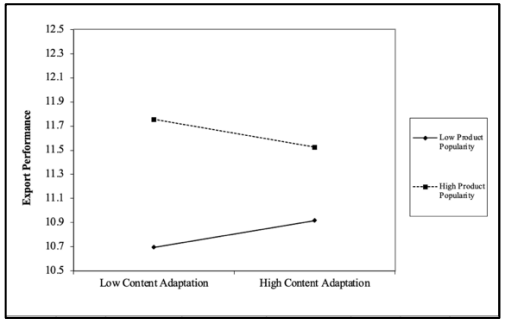

Figure 3a The interaction effect of title adaptation and initial product popularity

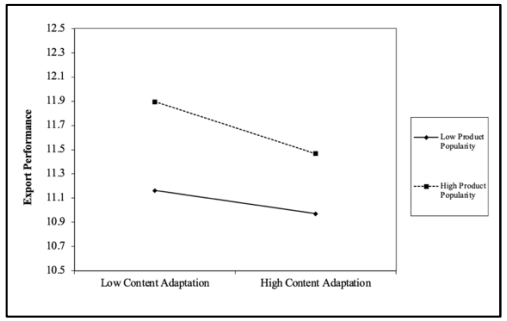

Figure 3b The interaction effect of content adaptation and initial product popularity

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International Market Opportunity Identification Rules and its Evolution Mechanism of International New Ventures: A Longitudinal Case Study Based on Loctek

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International Market Opportunity Identification Rules and Its Evolution Mechanism of International New Ventures: A Longitudinal Case Study Based on Loctek[1]

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Extended Abstract

In the VUCA era, international new ventures urgently need to actively respond to the risks and challenges of international operations by quickly identifying opportunities in the international market, but the existing studies lack sufficient theoretical explanation on how international new ventures identify international market opportunities. We take Loctek as the case study object, and based on the rule-based reasoning logics, deeply analyze the rules behind international new ventures' identification of international market opportunities and the evolution mechanism of the rules.

Keyword: International Market Opportunities, Opportunity Identification, International New Ventures

1. Introduction

In recent years, with rising international trade protectionism and the global spread of COVID-19, the global economic and political system is undergoing major structural reshaping (Petricevic & Teece,

[1] Updated on 21 October 2022

2019), which has led to the increasingly prominent characteristics of the volatility, uncertainty, complexity and ambiguity (VUCA) of the international environment (Alvarez & Barney, 2020), posing a serious threat to the survival and development of international new ventures. In this context, international new ventures urgently need to quickly identify opportunities in the international market, constantly seek new market niches, so as to prevent and control the strong impact of the uncertain environment, continue to enhance international competitiveness, and achieve the climb and transition of the global value chain position (Prashantham & Floyd, 20l9). Therefore, how international new ventures quickly identify opportunities in the international market characterized by VUCA to obtain sustainable competitive advantages has become an important issue to be solved urgently in academia and industry (Huang et al., 2021).

2. Literature review

2.1. International market opportunity identification

In the field of international business, international market opportunity identification has always been the core and hotspot of academic research (Lundberg & Rehnfors, 2018). Based on multiple perspectives such as individual cognition and emotion (Tabares et al., 2021), relationship network(Ruiz-Palomino & Martínez-Cañas, 2021), institutional environment(Tang, 2010) and resource theory (George et al., 2016), researchers have conducted relevant research and discussion on international market opportunity recognition from multiple levels, such as individuals, enterprises and environment(Reuber et al., 2018). However, most of them focus on the antecedents of opportunity identification and their impact on international decision-making and performance, lack a clear understanding of the opportunity identification process, and fail to further analyze the rules and underlying logic behind opportunity identification(Lorenz et al., 2018; Polas & Raju, 2021).

2.2. Rules behind the identification of international market opportunities and their evolution

In the view of cognitive science, through rule-based reasoning logics, individuals or organizations can

conduct psychological simulation of causality, evaluate and integrate situations and information in structured ways such as attributive thinking and consequence reasoning, thereby reducing uncertainty in the decision-making process (Chandra, 2017; Healey et al., 2021). The existing research on rule-based reasoning logics mainly focuses on psychology, economics and artificial intelligence (Wood & Williams, 2014). The research on rule-based reasoning logics in the field of management mostly stays at the theoretical level, focusing on the applicability of rule-based reasoning logics (Rastkhiz et al., 2018). In addition, previous studies mainly focused on the early stage of internationalization of international new ventures (Angelsberge et al., 2017), while ignoring the dynamic changes of internationalization situations in the process of opportunity identification (Clark et al., 2018; Hoorani et al., 2023).

3. Method and results

3.1. Method

This research adopts an exploratory, longitudinal, and single case study design. This study focus on the question "how do international new ventures identify international market opportunities", which belongs to the category of "how", and case studies are suitable for answering "how" and "why" questions (Eisenhardt, 1989). Besides, compared with multiple case studies, single case studies can more fully display case data, so as to discuss and analyze the implications of the case more intensively. In addition, the identification of international market opportunities is a dynamic and continuous process. Longitudinal case study can fully demonstrate the process of phenomena changing over time (Van de Ven & Huber, 1990), so as to further analyze the rules behind the identification of different types of international market opportunities and the logical differences between the rules.

3.2. Results

3.2.1. We explored the rules behind the identification of international market opportunities.

International new ventures mainly identify simple opportunities in the international market based on

perceptual rules, which include three aspects: identifying opportunities based on intuitive thinking, identifying opportunities based on experience, and identifying opportunities based on self-cognition.

International new ventures identify transformation opportunities based on the mixture of perceptual and rational rules, which include three aspects: identifying opportunities based on business experience, identifying opportunities based on practical knowledge and identifying opportunities based on development analysis.

International new ventures mainly identify complex opportunities based on rational rules, which include three aspects: identifying opportunities based on benefit analysis, identifying opportunities based on cost calculation and identifying opportunities based on market forecast.

3.2.2. We clarified the evolution mechanism of the rules.

The change of internationalization situation will lead to the gradual deepening of the internationalization degree of international new ventures (Wood et al., 2021), thus making international market opportunities evolve from simple to complex. As there are significant differences in the ability of international new ventures to resist risks and the amount of knowledge and resources they have when identifying different types of opportunities, international new ventures need to constantly update their awareness of opportunity identification, revise and adjust the rules of opportunity identification (Coviello, 2015). It is found that the dynamic change of international context drives international new ventures to constantly adjust and revise the rules of opportunity identification, making them present an evolution trend of "perceptual rules predominate-perceptual rules mixed with rational rules-rational rules predominate".

4. Disscussion

4.1. Theoretical contributions

First, by deconstructing the process of identifying international market opportunities for international

new ventures, we have explored the rules behind their opportunity identification and the evolution mechanism of the rules, which can contribute to the research gap caused by insufficient consideration of existing opportunity research on how to identify international market opportunities (Reuber et al., 2018). Second, we creatively introduced rule-based reasoning logics into the research on international market opportunity recognition of international new ventures, broadening the theoretical boundary of rule-based reasoning logics (Chandra, 2017), and contributing to the research gap caused by the existing research that has not yet fully combined rule-based reasoning logics with the practice of international new ventures (Williams & Wood, 2015).

4.2. Practical implications

For international new ventures, the rules for identifying international market opportunities are not static, but evolve dynamically with the change of market environment and the development of enterprises. International new ventures should adjust their perception of international market opportunities in time according to the changes in the internationalization context they are facing, and select appropriate rules for identifying different types of opportunities to improve the speed and efficiency of identifying opportunities in the international market.

4.3. Limitations and future research directions

First of all, we mainly analyze the process of identifying international market opportunities, but does not clarify how to evaluate and utilize opportunities after identifying opportunities. Secondly, the basic assumption of this study is that "opportunities exist objectively". Future research can further analyze the rules and underlying logic behind the construction or creation of international market opportunities by international new ventures. Finally, the case enterprise selected in this study belong to manufacturing enterprises, and the impact of industry differences on the opportunity identification process has not been studied in depth. In the future, enterprises in multiple industries can be selected to use the multi case study method to compare and analyze whether there is industry heterogeneity in the international market opportunity identification rules.

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The Signaling Effect of Firms' International Diversification Behaviors in Debt Financing

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The Signaling Effect of Firms' International Diversification Behaviors in Debt Financing Activities (Extended Abstract)

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Abstract

This research explores the signaling effect of international diversification behaviors among small and medium-sized enterprises. Specifically, SMEs' level of international diversification serves as a signal for their higher qualities and lower defaulting risks, thus reducing the information asymmetry dilemma faced by small firms and benefiting their debt financing activities. Moreover, such signaling benefits would be weaker if the information asymmetry problem is alleviated (i.e. when market intermediaries are better developed, or when there are other signals illustrating firms' true condition). Panel records of 121,321 Chinese manufacturing firms support the anticipated relationships.

Keywords: International Diversification, Signaling Effect, Debt Financing

Introduction

Previous literature has shown that some of the firms' international activities may serve as important signals to the outside audience (Reuer and Ragozzino, 2014; Yan, Wang, and Deng, 2018), which may benefit their future development. We thought such signals would be more important for

small and medium-sized enterprises among which the information asymmetry problem is more salient due to the lack of transaction records and other information of them. One of the signals that are usable for SMEs is their international diversification activities. First, this strategic behavior is visible to other audiences, as SMEs tend to actively introduce their overseas markets to others. Second, this behavior is hard to imitate because it is always costly to explore overseas markets, especially several different markets. Such hidden attributes of international diversification behaviors are consistent with the necessary attributes of a valid signal (Connelly et.al, 2011). Therefore, it becomes indispensable to explore whether it could be a signal for SMEs to demonstrate their true quality and thus better cope with the information asymmetry dilemma. In our research, we explored the signal effect of firms' overseas market scope and tried to answer the following questions: 1) whether the firms' level of international diversification serves as a signal of firms' risk and competence, thus improving their accessibility to external financing resource and 2) under what conditions would the predicted signal effect be strengthened or mitigated.

Literature and Framework

A brief review of international diversification research

Research in the IB field has widely explored the antecedents and outcomes of international diversification. In terms of the antecedents, scholars found that the attributes of the top management team (Sambharya, 1996; Tihanyi et al., 2000; Tihanyi et al., 2003; Wally and Becerra, 2001), the governance structure (Jensen and Meckling, 1976; Sanders and Carpenter, 1998), intangible assets (Delgado-Gómez, Ramírez-Alesón, and Espitia-Escuer, 2004; Nachum and Zaheer, 2005), other markets participants (Martin, Swaminathan and Mitchell, 1998), and industrial competition structure(Sarkar, Cavusgil and Aulakh, 1999) determined firms' decision about and the level of international diversification. While others focused on the benefits of international diversification, including economic scale (Contractor, Kundu, and Hsu, 2003; Eckert et al., 2010; Kim, Hwang, and Burgers, 1993), sparing fixed costs (Contractor, 2012; Pugel, 1978; Tan and Hwang, 2002), access to sticky knowledge (Andersson, Forsgren and Pedersen, 2001), developing strategic flexibility and spare

risks (Chung et al., 2010; Fisch and Zschoche, 2011; Fisch and Zschoche, 2012; Lee, Beamish, Lee, & Park, 2009; Lee and Makhija, 2009; Lee and Song, 2012; Rugman, 1976). The theoretical perspectives used in that research include transaction costs (Buckley et al., 1976; Casson, 1979; Rugman, 2006), resource and capability (Rugman and Verbeke, 2002), institution and culture (Geleilate et al., 2016; Marano et al., 2016), corporate governance (Sanders et al., 1998), network and position (Athanassiou and Nigh, 2000), and organizational learning (Chang, 1995; Yeoh, 2004; Zahra et al., 2000), while the signaling perspective was seldom mentioned. In this research, we tried to explore firms' international diversification activities from the lens of signal theory (Spence,1973).

Signaling effect of firms' business activities in the IB context

Firms choose different kinds of strategic activities to build sustainable competitive advantages, but some kinds of business activities also serve as signals that could convey unobservable information about firms. In the IB context where the composition of the potential audience is more complex, several kinds of strategic behaviors have been found to have signaling effects. Shaver (2011) mentioned that firms' sales revenue from overseas markets implied their more stable future cash flow, higher productivity, and competitive advantages in the foreign markets, thus improving their access to external financial resources and benefiting their capital investment. Reuer and Ragozzino (2014) also proved that firms' engagement in exporting activities reflect their higher productivity and better prospect(Bernard & Jensen, 1999; Delgado, Farinas, & Ruano, 2002), thus fostering the formation of their international alliance. Yan, Wang, and Deng (2018) explored the signal effect of outward FDI and found that outward FDI of MNEs from emerging markets implied firms' quality and prospects, thus influencing their leverage of external resources in the local markets.

International diversification and debt financing——the signaling effects

Firms that operate in diverse destination countries have framed a complex client portfolio composed of irrelated sub-segments, which are similar to an investment portfolio to spread the risks (Geringer, Beamish, & DaCosta, 1989; Hitt, Hoskisson, & Ireland, 1994; Rugman, 1976). When unanticipated external changes occurred, firms that have entered into multi-markets are more flexible

(Lee et al., 2009; Lee & Makhija, 2009), thus are more likely to cope with the negative effect exerted by the sudden shock (Garrido-Prada, Delgado-Rodriguez, & Romero-Jordán, 2019; Lee et al., 2009). Moreover, as each of the foreign markets has its own cultures and institutions (North, 1990; Scott, 1995), firms have to make adaptations and adjustments when entering new markets. The more different markets they entered, the better their adaptability and the more experiences they would cultivate. This would be very useful to cope with emerging shocks when the external environment changed.

Combining the above arguments, we would propose that firms' level of international diversification provides information about their ability to hedge risks, thus are perceived riskless with more stable sales revenue and are less likely to default (Hirsch & Lev, 1971; Miller & Pras, 1980), so they are more likely to obtain debt financing. Thus, we can develop the following hypothesis

> ***Hypothesis 1.*** *Ceteris paribus, firms with higher levels of international diversification would be more successful in their debt financing activities.*

The effect of certain signals would be weakened when the information-asymmetry problem is alleviated, which would happen when the market intermediaries are better developed or when firms have other signals to show their condition. When the market intermediaries are better developed, there would be more information about the focal firms exchanged in the market, thus reducing the level of information asymmetry. Moreover, the stability of firms' overall market also serves as an alternative signal that reduces the risk concerns from the creditors, hence weakening the signaling effect of international diversification. Finally, if the firms are dominated by legal-person shareholders, they would be under stronger monitoring, and also have more resources to deal with the risk. This may serve as an alternative signal showing firms' less possibility of default, thus weakening the positive relationship between international diversification and debt financing.

> ***Hypothesis 2.*** *The development of market intermediaries weakens the positive relationship between international diversification and firms' debt financing.*
>
> ***Hypothesis 3.*** *The level of market stability weakens the positive relationship between international diversification and debt financing.*
>
> ***Hypothesis 4.*** *The positive relationship between international diversification and debt*

financing would be weaker if the firm is dominant by legal-person shareholders

Method and Results

Empirical Design

Two datasets were merged to simultaneously capture firms' level of international diversification and their debt financing results. The first is the dataset about firms from the Chinese manufacturing industry that is annually published by the National Bureau of Statistics. Those records are collected annually and capture the basic financial information to capture firms' gaining of credit. The second is the exporting records published by the Chinese administration of customs, which enable us to capture the exporters' level of international diversification. We finally obtain 561,531 firm-year observations of 121,321 firms between 2003 and 2014.

The independent variable, ***international diversification***, is measured by the number of different overseas market firms entered, and the related information is obtained from the customs records, while the dependent variable ***debt financing*** is measured by the level of trade credit firms utilize, which is also adjusted by the industry-year mean. To test the moderating effects, the development of market intermediaries is measured by one of the sub-dimension indicators from the NERI marketization index for each province, while the level of **market stability** is measured by the opposite number of the weighted standard deviation of market sizes among the past 3 years. And the third moderator, ***legal-person dominance*** is proxied by a dummy variable that is equal to 1(0 otherwise) if more than 25% of firms' shares are occupied by legal-person shareholders, The control variables include firm size, firm age, leverage rate, profitability, tangibility, maturity of financial institutions, development of market intermediaries, firms' competitive positions, total sales revenue from the overseas market, and firms' level of OEM intensity. Also, to exclude potential influence from the macro-economic environment, a series of Year dummies are controlled. GLS regression with fixed-effect terms was conducted to exclude the potential endogeneity concerns.

Conclusions and Discussions

All of the hypotheses were supported by our sample, meaning that SMEs could adopt the international

diversification strategy to show their lower level of risk, and help them to obtain more debt financing resources. Moreover, such a signaling effect would be more important when market intermediaries are less developed, or when the firms lack other signals to show their true condition when competing with others. Our research is expected to make contributions in the following aspects. First, we approach firms' international diversification behaviors from a new perspective (i.e. the signaling perspective), which was mentioned by previous literature (Shaver, 2011) but just received inadequate exploration. We verified the signaling benefits of international diversification which add more insights to the ID literature. Second, we contribute to the literature following signal theory (Spence, 1973). By focusing on the interactive effects between different signals stimulated from the same event (i.e. the level of international diversification and the level of market stability from firms exporting activities), we illustrate that different signals that show the same attribute of the focal firm have substitution effects with each other.

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Overcoming the Legitimacy Gap? Corporate Social Responsibility and the Internationalization of Chinese Firms in Developed Economies

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Overcoming the Legitimacy Gap? Corporate social responsibility and the Internationalization of Chinese Firms in Developed Economies

ABSTRACT

Drawing on institutional theory, this study examines the question of how EMNCs' corporate social responsibility (CSR) affects their internationalization in the developed economies. We propose that EMNCs can draw on corporate social responsibility to overcome the liability of foreignness and demonstrate legitimacy in developed economies. To test these hypotheses, we use firm-level data from a sample of 1899 Chinese firms in developed countries. Results show that EMNCs can expand their internationalization with the help of corporate social responsibility. We further show that the positive influence of corporate social responsibility on internationalization is more salient for emerging MNCs with political embeddedness but less important for those with market orientation.

INTRODUCTION

Internationalization helps firm grow and expand. However, emerging multinational companies (EMNCs) find it hard to internationalize due to the liability of foreignness outsidership (Li & Fleury, 2020). The most salient obstacle for EMNCs to enter overseas market is the technology or capability gap between them and those from developed economies. EMNCs are deemed as lacking advanced and cutting-edge technologies and brand names (e.g. Awate et al., 2012; Kim et al., 2014; Klossek et al., 2012; Verbeke & Kano, 2015), which may arouse concerns of stakeholders from foreign countries. The institution voids in emerging economies further make it harder for those firms to develop good governance (Cuervo-Cazurra, 2018) and build international management capabilities (Estrin, Meyer, & Pelletier, 2018; Schmidt & Sofka, 2009).

Recently, scholars find that even for EMNCs with advanced technology and capabilities, they still face difficulties in entering overseas market (Peng, 2012). The recent studies link these difficulties to the "liability of origin" and deem them as the legitimacy challenges generated by the institutional differences across countries (Jackson & Deeg, 2008; Madhok & Keyhani, 2012; Marano et al., 2017; Scalera et al., 2020). For instance, many developed countries prefer foreign firms from developed markets rather than from emerging markets (Cuervo-Cazurra, 2018). Hence, Chinese SOEs generally face a larger legitimacy gap and perform less well in developed than in emerging markets (Jackson & Deeg, 2008), because the institutional differences and concerns with national security prevent stakeholders in developed economies from accepting SOEs' investment (Li et al., 2022).

To address such challenges, MNCs may develop proactive non-market strategies to enhance their legitimacy (Mellahi et al., 2016). For instance, firms can choose to collaborate with other firms in the foreign countries (Mayer & Chang, 2020; Zhang, 2019). However, very few studies have examined corporate social responsibility (CSR) behavior as a way to facilitate firm internationalization. The rare studies have shown that CSR enhances firm internationalization performance by improving a firm's reputation and enhancing its ability to build relationship with international partners and customers (Bohhe & Cruz, 2010; Bouquet & Deutsch, 2008; Strike et al., 2006). But they focus on the general MNCs rather than EMNCs.

In addition, they fail to examine how CSR affects EMNCs' internationalization location choice. So our research questions are: 1) How does EMNCs' CSR affect their FDI in developed economies? 2) How will political embeddedness and market orientation moderate the relationship between CSR and EMNCs' FDI investment developed economies?

We propose that CSR contain a set of practices that EMNCs draw on to overcome the liability of foreignness and reduce legitimacy gap in developed economies. To test these hypotheses, we use firm-level data from a sample of Chinese MNCs. Results show that EMNCs can expand their internationalization in developed economies with the help of CSR behavior. Further, for firms with market orientation, the effect of CSR is less salient since market orientation works as an alternative way of signaling legitimacy. In contrast, the influence of CSR is more salient for firms with political embeddedness, which face up with a higher level of legitimacy gap.

Our study makes contribution in two folds. First, we extend the internationalization literature by showing that EMNCs face up with legitimacy gap generated by institutional differences. Non-market strategy such as CSR could help facilitate firms to overcome such gaps. Second, we contribution to CSR literature by showing that a firm's CSR behavior is beneficial for EMNCs' internationalization by signaling legitimacy.

THEORETICAL BACKGROUND

Institutional Differences

A country's formal institutional setting helps form the identity and interests of economic actors (Li et al., 2022). Emerging and developed economies differ in terms of formal institutions including policy regimes and institutional foundations, which give birth to different models of capitalism across countries (Jackson & Deeg, 2008). Emerging economies and developed economies also have various informal institutions. For instance, countries may differ in their national CSR reputation signaling (Dau et al., 2020), which represents an important, and distinct, facet of the normative institutional element.

The institutional differences across countries would pose challenges for MNCs to invest overseas. It is hard for foreign stakeholders to accept MNCs, not only because they are different in terms of their thought, mindset and norms fostered by disparate institutions, but

also because information asymmetry exists among them. Hence, MNCs usually encounter with so-called “liability of foreignness” or “liability for outsidership” (Jackson & Deeg, 2008; Madhok & Keyhani, 2012).

Legitimacy Gap of EMNCs

Among all the institutional differences, formal and informal institutional differences between emerging and developed economies would be most salient because they differ in terms of the capitalism and market logic (Li et al., 2022). We argue that the variety of formal and informal institutions between developed and emerging countries will subsequently lead to legitimacy gap for EMNCs when they invest in developed countries.

Legitimacy refers to the perception that an entity’s actions are appropriate or desirable within some socially constructed system of norms, values, beliefs, and definitions (Suchman, 1995). For EMNCs, the perceptions of legitimacy could be socially constructed by the host country government, firms and individuals. Because of the institutional differences, stakeholders from developed countries have legitimacy concerns about EMNCs in general (Li et al., 2022). Institutional differences also drive stakeholders in developed countries to have negative stereotype and unfavorable perceptions toward EMNCs (Kostova & Zaheer, 1999). For instance, EMNCs from emerging countries with low national CSR reputation would be deemed as illegitimate in the eyes of stakeholders in developed countries. Institution differences further make it hard to convey adequate information about EMNCs to host stakeholders (Marano et al., 2017). Hence, EMNCs would face up with a huge legitimacy gap while investing in developed economies.

HYPOTHESIS DEVELOPMENT

CSR and Emerging Economy MNCs’ FDI in Developed Economies

We argue that CSR works as a legitimating mechanism that dissociates an EMNCs from its home country institutions, thereby reducing the negative influence of institution difference and associated legitimacy gap. CSR conveys information about EMNCs and disassociates EMNCs from their home country institutions in the eyes of stakeholders in developed countries (Marano et al., 2017). CSR also reduces the legitimacy gap caused by national CSR norm difference, by conforming to the meta-norms of CSR in developed countries and

reflecting EMNC's willingness to align with local stakeholders' norms and expectations in developed countries (Campbell et al, 2012; Fiaschi, Giuliani, & Nieri, 2017; Gugler and Shi, 2009). In that sense, EMNCs with CSR behavior would be deemed as legitimate in the developed countries and face up with fewer challenges. Hence, we propose,

Hypothesis 1: EMNCs with more CSR investment tend to have more FDI investment in developed countries.

The Moderating Effect of Market Orientation---Alternative Legitimacy Mechanism

The effect of CSR in addressing legitimacy gap is less important for EMNCs with a high level of market orientation. On the one hand, EMNCs with market orientation would be regarded by foreign stakeholders as disassociating from its home country institution voids. Hence, the dissociating effect of CSR is less important. On the other hand, EMNCs with market orientation are more aligned with the meta-norms and global standards and hence would perceive a lower level of legitimacy gap. CSR then is less needed to reduce legitimacy gap.

Hypothesis 2: The positive influence of CSR on FDI investment in developed countries is less salient for emerging MNCs with market orientation.

The Moderating Effect of Political Embeddedness

For EMNCs more embedded in the home country political institutions, the signaling effect of CSR is stronger. Political embedded EMNCs face up with greater scrutiny from stakeholders in developed countries (Aray et al., 2021; Li et al., 2022). Thus, the role of CSR in reducing legitimacy gap would be more salient. In addition, political embedded EMNCs are deemed as more embedded into their home country political institutions, so CSR's dissociating effect would be more important. Hence, we propose,

Hypothesis 3: The positive influence of CSR on FDI investment in developed countries is more salient for emerging MNCs with political embeddedness.

METHODS

Data and Sample

We obtain stock price and financial statement information from the China Security Market and Accounting Research (CSMAR) database and pollution and economic data from

the GTA Regional Economy database. Our initial sample consists of all of the firms listed on the SSE and SZSE from 2006 to 2011. We exclude financial firms and B-share (foreign share) firms, as they are subject to different regulations and market trading mechanisms. In addition, we exclude firms that voluntarily released CSR reports during our sample periods. 13 Finally, we exclude firm-years that are missing necessary data for the variables used in our analysis or that have non-positive shareholders' equity. After these exclusions, we are left with a sample of 6952 firm-years. From this sample, we identify 1674 treatment firm-years and 5278 benchmark firm-years.

Measures

Corporate internationalization. is calculated as the number of foreign subsidiaries in developed economies (year t).

Corporate social responsibility. Natural log of the amount of a firm's charitable contributions during a specific year (t-1).

Market orientation. We used market development and TMT foreign experience to reflect market orientation. Market development was assessed from indexes developed by the NERI (Fan &Wang, 2012) and computed using data from Chinese statistical yearbooks, reports from the administrations of industry and commerce, and surveys. The NERI indexes capture the progress of institutional development in all 31 Chinese provinces, municipalities, and autonomous regions, and were frequently used as an indicator of the level of market development for the firm. TMT foreign experience was measured by the number of top executive managers that have foreign work experience or education experience.

Political embeddedness. We use corporate state ownership (%) and CEO political embeddedness to represent political embeddedness. Corporate state ownership (%) was measured by the percentage of shares held by, a government entity, meaning a central government, a local government, and/or another government agency, such as the State-Owned Assets Supervision and Administration Commission (SASAC). CEO Political embeddedness was measured by a dummy variable equal to 1 if the CEO was an official of the central or a local government, the military, a deputy to the NPC (National People's Congress), a member of the CPPCC (China People's Political Consultative Conference), and 0 otherwise.

Control Variables. We also controlled for industry and year fixed effects. Firm size was measured as the nature log of firm total asset. Firm age was measured by the number of years a firm has been established. Firm marketing intensity was calculated as the ratio of selling, general, and administrative expenses to sales. It captures a firm's willingness to spend on marketing and selling-related activities in an effort to differentiate itself from competitors. Chair/CEO duality was measured as a dummy variable equal to 1 if the CEO was also the chair of the firm. Board independence (%) was measured by the ratio of independent directors to total directors.

Results

Table 1 presents the summary statistics of all variables and the correlation matrix of the variables used in the analysis.

Table 2 shows the effects of donation on firm internationalization (Columns 1, 2 and 3). Since the lagged internationalization may affect CSR and internationalization, we follow the study of Li et al. (2021) and use the dynamic model by controlling the lagged internationalization. Column 1 of Table 2 shows that controlling with two-year lag is enough. As predicted, Column 1 of Table 2 shows that the effect of donation on internationalization in developed economies is positive and significant ($\beta = 0.029$, $p < 0.001$). We also check in Column 2 to see whether the results still hold while not controlling the lagged internationalization. In contrast, Column 3 of Table 2 shows that the effect of donation on internationalization in underdeveloped economies is positive but insignificant. Hence, these results support Hypotheses H1.

In Table 3, we checked the moderating effects of market orientation and political embeddedness. Column 1 of Table 3 shows that the moderating effect of market development is marginally significant and negative ($\beta = -0.005$, $p < 0.1$); Column 2 of Table 3 shows that the moderating effect of TMT foreign experience is significant and negative ($\beta = -0.014$, $p < 0.05$), thus supporting Hypotheses H2.

Column 3 of Table 3 shows that the moderating effect of market development is marginally significant and positive ($\beta = 0.057$, $p < 0.1$); Column 4 of Table 3 shows that the

moderating effect of TMT foreign experience is significant and positive ($\beta = 0.024$, $p < 0.05$), thus supporting Hypotheses H3.

Robustness check

One concern about the effect of CSR on internationalization is that some unobservable factors may affect CSR and internationalization simultaneously. Hence, we deal with the endogeneity issue by testing the results use heckman selection model and instrumental variable. Shown in table 4, the results are similar to those in Table 2.

Another concern is the reverse causality between internationalization and CSR. A firm with a high degree of internationalization degree is more likely to conduct CSR due to their visibility and exposure to the institution pressure. So in table 4, we checked the reverse causality issue in Table 5 by using donation as the dependent variable while the internationalization level as the independent variable. The results are similar to those in Table 2.

DISCUSSION

This study extends our understanding of how CSR affects firms' internationalization by suggesting that CSR benefits firms' investment in developed economies. Our results suggest that in addition to addressing the liability of foreignness, CSR behavior also helps to overcome the institutional difference. Moreover, for those EMNCs with market orientation, CSR is less effective in reducing the legitimacy gap since market orientation also helps to reduce the legitimacy gap. In contrast, for those with a high level of political embeddedness, they encounter a severer legitimacy gap and hence CSR is more helpful for them.

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Table 1. Correlation table

	variable	mean	sd	1	2	3	4	5	6	7	8	9
1.	Foreign sub. in dev.	0.313	1.044	1.000								
2.	Foreign sub. in underdev.	0.576	2.767	0.4488*	1.000							
3.	Foreign sub. In total	1.351	5.455	0.5893*	0.8678*	1.000						
4.	Donation (ln)	8.431	6.292	0.1486*	0.1171*	0.1369*	1.000					
5.	Market development	7.520	1.994	0.1324*	0.1082*	0.1463*	0.0182*	1.000				
6.	R&D intensity	0.015	0.027	0.0993*	0.0267*	0.0342*	-0.0540*	0.2128*	1.000			
7.	TMT foreign exp.	0.215	0.583	0.2435*	0.2307*	0.2528*	0.1018*	0.0955*	0.1671*	1.000		
8.	State ownership (%)	0.094	0.183	-0.0512*	-0.0177*	-0.0255*	0.0357*	-0.0804*	-0.1698*	-0.0656*	1.000	
9.	CEO political embeddedness	0.310	0.462	-0.0140*	-0.013	-0.0203*	0.0735*	-0.0900*	-0.1473*	-0.0676*	0.1693*	1.000
10.	Firm age	13.053	6.687	0.001	-0.007	0.003	-0.0936*	0.0221*	-0.0162*	-0.012	-0.2074*	0.0338*
11.	Firm size	22.318	1.463	0.2345*	0.2092*	0.2441*	0.3231*	0.1275*	0.003	0.2018*	0.0499*	0.0514*
12.	Marketing intensity	0.061	0.079	0.0406*	-0.0175*	-0.011	0.0372*	-0.007	0.1782*	0.0435*	-0.1144*	-0.0817*
13.	CEO duality	0.174	0.379	0.013	-0.001	0.004	-0.011	0.0779*	0.1502*	0.0436*	-0.1029*	-0.0246*
14.	Board independence	0.370	0.053	0.0319*	0.0253*	0.0280*	0.0177*	-0.008	0.0489*	0.0230*	-0.0726*	-0.0229*

	variable	mean	sd	10	11	12	13
11.	Firm size	22.318	1.463	0.1423*	1.000		
12.	Marketing intensity	0.061	0.079	-0.007	-0.1542*	1.000	
13.	CEO duality	0.174	0.379	-0.1041*	-0.0981*	0.0876*	1.000
14.	Board independence	0.370	0.053	0.0262*	0.0745*	-0.004	0.0700*

Table 2. Regression models: Developed vs. underdeveloped economies

Model: Negative binomial	Model_1	Model_2	Model_3	Model_4
	DV=foreign sub. in dev. eco.		DV=foreign sub. in underdev. eco.	DV=foreign sub. in total
Foreign sub. in dev./underdev/sum (t-1)	0.612***		0.499***	0.258***
	[17.082]		[16.125]	[19.426]
Foreign sub. in dev./underdev/sum(t-2)	0.093**		0.079**	0.028*
	[2.713]		[2.750]	[2.172]
Foreign sub. in dev./underdev/sum(t-3)	-0.008	0.580***	-0.060	-0.025
	[-0.217]	[12.472]	[-1.473]	[-1.595]
Foreign sub. in dev./underdev/sum(t-4)	-0.020	0.163**	0.012	0.061*
	[-0.433]	[3.046]	[0.176]	[2.439]
Foreign sub. in dev./underdev/sum(t-5)	0.021	-0.015	0.018	-0.022
	[0.538]	[-0.380]	[0.431]	[-1.111]
Foreign sub. in dev./underdev/sum(t-6)	-0.007	-0.066	0.003	-0.030
	[-0.145]	[-1.232]	[0.082]	[-1.461]
Donation (ln) (t-1)	0.029***	0.024**	0.002	0.013**
	[4.463]	[2.699]	[0.403]	[3.005]
Market development(t-1)	0.041^	0.062*	0.066**	0.089***
	[1.950]	[2.246]	[3.035]	[5.135]
R&D intensity(t-1)	5.874***	6.708***	4.137***	4.383***
	[4.720]	[4.091]	[3.452]	[4.902]
TMT foreign exp. (t-1)	0.127**	0.215***	0.097^	0.113**
	[2.856]	[3.787]	[1.918]	[2.848]
State ownership(%)(t-1)	-0.463	-0.430	-0.785**	-0.631*
	[-1.384]	[-1.039]	[-2.860]	[-2.526]
CEO political embeddedness(t-1)	-0.147^	-0.311**	-0.243***	-0.251***
	[-1.908]	[-3.013]	[-3.310]	[-4.477]
Firm age(t-1)	0.006	0.010	0.003	0.010^
	[0.758]	[0.880]	[0.438]	[1.683]
Firm size(t-1)	0.192***	0.328***	0.251***	0.214***
	[6.013]	[7.422]	[8.225]	[9.019]
Marketing intensity(t-1)	1.298**	1.544**	0.405	0.607^
	[2.979]	[2.640]	[0.985]	[1.880]
CEO duality(t-1)	-0.080	-0.062	0.084	-0.027
	[-0.810]	[-0.522]	[0.974]	[-0.411]
Board independence(t-1)	-0.055	-0.447	-0.073	0.223
	[-0.086]	[-0.538]	[-0.127]	[0.491]
Constant	-7.034***	-9.905***	-7.666***	-6.694***
	[-9.638]	[-9.678]	[-10.471]	[-11.755]
Log lik.	-5089.182	-5835.216	-6528.739	-10755.601
Chi-squared	804.159	566.757	714.518	1157.128
N	8268	8302	8268	8268

t statistics in brackets; year dummies controlled but not reported; ^p<0.1
*p<0.05 **p<0.01 *** p<0.001

Table 3. Regression models: the moderating effects

Model: Negative binomial regression	Regression models			
DV: Foreign sub. in dev.	Model 1	Model 2	Model 3	Model 4
Foreign sub. in dev. (t-1)	0.653***	0.651***	0.652***	0.651***
	[16.295]	[16.224]	[16.403]	[16.496]
Foreign sub. in dev. (t-2)	0.133**	0.133**	0.136**	0.135**
	[2.938]	[2.967]	[3.034]	[2.997]
Donation (ln) (t-1)	0.064*	0.030***	0.021**	0.017*
	[2.562]	[4.417]	[3.266]	[2.519]
Market development(t-1)	0.116**	0.061**	0.063**	0.063**
	[3.106]	[3.058]	[3.103]	[3.108]
R&D intensity(t-1)	6.102***	6.012***	6.164***	6.075***
	[5.465]	[5.330]	[5.512]	[5.441]
TMT foreign exp. (t-1)	0.115**	0.277**	0.116**	0.118**
	[2.612]	[3.530]	[2.664]	[2.706]
State ownership(%)(t-1)	-0.318	-0.311	-0.937*	-0.320
	[-1.600]	[-1.563]	[-2.262]	[-1.629]
CEO political embeddedness(t-1)	-0.094	-0.094	-0.094	-0.347*
	[-1.308]	[-1.313]	[-1.316]	[-2.263]
Firm age(t-1)	-0.008	-0.008	-0.008	-0.008
	[-1.497]	[-1.449]	[-1.443]	[-1.573]
Firm size(t-1)	0.191***	0.192***	0.191***	0.190***
	[7.062]	[7.115]	[7.123]	[7.070]
Marketing intensity(t-1)	1.401***	1.421***	1.408***	1.404***
	[3.740]	[3.775]	[3.723]	[3.730]
CEO duality(t-1)	-0.040	-0.040	-0.038	-0.048
	[-0.516]	[-0.513]	[-0.494]	[-0.616]
Board independence(t-1)	0.071	0.073	0.005	0.070
	[0.136]	[0.139]	[0.009]	[0.133]
Donation (ln) (t-1)* Market dev. (t-1)	-0.005^			
	[-1.736]			
Donation (ln) (t-1)* TMT foreign exp. (t-1)		-0.014*		
		[-2.263]		
Donation (ln) (t-1)*State ownership(t-1)			0.057^	
			[1.797]	
Donation (ln) (t-1)* CEO poli.embed. (t-1)				0.024*
				[2.045]
Constant	-7.641***	-7.275***	-7.137***	-7.127***
	[-11.912]	[-12.244]	[-11.953]	[-11.916]
Log lik.	-7662.665	-7661.353	-7662.403	-7661.007
Chi-squared	794.362	861.601	806.035	803.839
N	14328	14328	14328	14328

t statistics in brackets; ^ p<0.1 *p<0.05 **p<0.01 *** p<0.001

Table 4. Regression models: Heckman selection model vs. dynamic OLS

Model: Negative binomial	Model 1: Heckman Two Stage Model			Model 2
DV: Foreign sub. in dev.	Stage 1	Stage 2: FE	Stage 2：RE	Dynamic model
Region level: % of firms	9.020***			
with foreign sub. in dev.	[15.732]			
Inverse mills ratio		0.777***	1.058***	
		[34.354]	[52.653]	
foreign sub. in dev. (t-1)				0.653***
				[16.378]
Foreign sub. in dev. (t-2)				0.135**
				[2.996]
Donation (ln) (t-1)	0.030***	0.022***	0.027***	0.025***
	[4.400]	[5.214]	[7.063]	[4.127]
Market development(t-1)	-0.136***	-0.130**	0.133***	0.062**
	[-3.335]	[-2.620]	[6.548]	[3.095]
R&D intensity(t-1)	3.764*	0.643	2.345**	5.997***
	[2.258]	[0.685]	[2.877]	[5.427]
TMT foreign exp. (t-1)	0.293***	0.174***	0.307***	0.117**
	[4.416]	[5.929]	[11.774]	[2.670]
State ownership(%)(t-1)	-0.813***	-0.383**	-0.652***	-0.311
	[-3.680]	[-3.079]	[-5.471]	[-1.569]
CEO political embeddedness(t-1)	-0.180^	-0.012	-0.091^	-0.092
	[-1.833]	[-0.206]	[-1.776]	[-1.289]
Firm age(t-1)	-0.039***	-0.045	-0.038***	-0.008
	[-3.532]	[-0.143]	[-7.543]	[-1.491]
Firm size(t-1)	0.747***	0.733***	0.820***	0.190***
	[14.106]	[15.859]	[31.136]	[7.061]
Marketing intensity(t-1)	3.767***	2.368***	3.896***	1.406***
	[5.083]	[3.835]	[10.477]	[3.734]
CEO duality(t-1)	0.093	0.096	0.123*	-0.040
	[0.881]	[1.535]	[2.242]	[-0.522]
Board independence(t-1)	0.326	0.402	0.224	0.053
	[0.441]	[0.913]	[0.574]	[0.101]
Constant	-21.355***	-1.786	-20.176***	-7.193***
	[-17.468]	[-0.009]	[-17.413]	[-12.025]
Log lik.	-2879.941	-2907.247	-5074.118	-7666.013
Chi-squared	1045.897	1512.276	3134.914	798.526
N	14948	4606	14948	14328

t statistics in brackets; year dummies controlled but not reported

^ p<0.1 *p<0.05 **p<0.01*** p<0.001

Instrumental variable= Regional level: percentage of firms with foreign sub. in dev. to those without foreign sub. in dev

Table 5. Regression models: Reverse causality

Model: Dynamic OLS	DV=Ln(donation)		DV=Ln(donation)	
	Model_1	Model_2	Model_3	Model_4
Donation (ln) (t-1)		0.435***		0.435***
		[33.819]		[33.834]
Donation (ln) (t-2)		0.180***		0.180***
		[13.614]		[13.619]
Donation (ln) (t-3)		0.070***		0.070***
		[5.852]		[5.863]
Donation (ln) (t-4)		0.080***		0.080***
		[7.426]		[7.427]
Foreign sub. in dev. (t-1)	0.176*	0.030		
	[2.353]	[0.835]		
Foreign sub. in underdev. (t-1)			0.082^	0.010
			[1.707]	[0.385]
Market development(t-1)	0.066	0.023	0.066	0.024
	[1.190]	[1.058]	[1.192]	[1.072]
R&D intensity(t-1)	-3.456	0.454	-3.020	0.551
	[-0.924]	[0.244]	[-0.805]	[0.297]
TMT foreign exp. (t-1)	0.099	0.123^	0.114	0.128^
	[0.719]	[1.908]	[0.818]	[1.945]
State ownership(%)(t-1)	-1.816***	-0.214	-1.834***	-0.219
	[-4.204]	[-0.650]	[-4.253]	[-0.667]
CEO political embeddedness(t-1)	0.109	-0.088	0.112	-0.088
	[0.595]	[-1.038]	[0.609]	[-1.033]
Firm age(t-1)	-0.101***	-0.003	-0.101***	-0.003
	[-6.688]	[-0.361]	[-6.667]	[-0.369]
Firm size(t-1)	1.718***	0.435***	1.727***	0.437***
	[22.967]	[10.635]	[23.104]	[10.579]
Marketing intensity(t-1)	8.998***	2.345***	9.118***	2.366***
	[6.349]	[3.781]	[6.423]	[3.810]
CEO duality(t-1)	0.366^	0.044	0.374^	0.046
	[1.821]	[0.379]	[1.861]	[0.388]
Board independence(t-1)	-0.727	-0.048	-0.728	-0.048
	[-0.443]	[-0.062]	[-0.443]	[-0.061]
Constant	-25.719***	-6.891***	-25.918***	-6.946***
	[-14.962]	[-8.002]	[-15.007]	[-7.971]
F	57.469	639.025	57.339	639.375
r2	0.180	0.513	0.180	0.513
N	14948	11067	14948	11067

t statistics in brackets; year dummies controlled but not reported

^ p<0.1 *p<0.05 **p<0.01 *** p<0.001

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How Does Zhongtai Strategy Enable Front-end Entrepreneurial SMEs To Internationalize?

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How does *Zhongtai* strategy enable front-end entrepreneurial SMEs to internationalize?

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Extended Abstract

The prevalence of *Zhongtai* strategy, empowered by advanced digital technologies has tremendously changed the way how digital platform owner innovates and enables small and medium-sized enterprises (SMEs) to internationalize. This research aims to elucidate the essence of *Zhongtai* strategy from a management perspective and explicate the mechanism of internationalization among entrepreneurial SMEs in a digital platform ecosystem. An abductive case study approach was adopted. The findings of the pilot study suggest *Zhongtai* strategy enables front-end SMEs with superior international performances of fast clock-speed innovation, lean operations, and online reputation, through the digital transformation of business, data, and technological middle platforms.

Keywords: International Business, Digital Platforms, *Zhongtai* Strategy, SMEs

1. Introduction

The advent of advanced digital technologies has been enabling enormous changes in international strategy, which has been creating a new digital economy globally (Sturgeon, 2019). This new digital economy, supported and characterized by digital platforms (Bonina et al., 2019; Gawer, 2020), has been transforming the nature of operations, production, and trade tremendously, both domestically and internationally (Kache & Seuring, 2017; Liu, Wu & Song, 2022; Rymarczyk, 2021).

Substantial conventional business seeks to transform into "platformania" in this wave of digital transformation (Cusumano et al., 2019: 30). Moreover, many entrepreneurial SMEs use digital platforms to leverage their business strategy (Cenamor, Parida & Wincent, 2019), as entrepreneurial SMEs struggle to compete in highly dynamic and fast clock-speed environments (Chan et al., 2018; Li et al., 2016).

Digital platforms have created unprecedented business opportunities for individual firms to penetrate foreign markets (Dillon, Glavas & Mathews, 2020; Liu et al., 2022; Shaheer & Li, 2020). Many international business (IB) researchers have suggested that many firms use digital technologies to pursue business opportunities globally (Brouthers et al., 2022; Chen et al., 2019; Liu et al., 2022; Shaheer & Li, 2020). However, not every firm could achieve rapid international growth by simply leveraging digital platforms, let alone entrepreneurial SMEs. Because creating value with overseas end-users on digital platforms is particularly complicated due to the extremely fragmented and highly dynamic needs in the international markets (Liu et al., 2022).

With the development of digital platforms, platform owners face information-building challenges (Mao et al., 2021). With the increasing amount number of user data, the traditional front-end and back-stage of the enterprise systems are imbalanced in the matching of operating speeds (Mao et al., 2021; Zhiji, 2020). Alibaba firstly proposed the strategic framework of "big middle platform, small foreground" in 2015 to upgrade the organizational structure and realize digital transformation based on *Zhongtai* strategy (Ding et al., 2021). Most of the research on this novel concept is in the field of Information Systems (ISs) (Ding et al., 2021, Mao et al., 2021; Zhang & Hou, 2020; Zhiji, 2020). Whereas there is little in the way of empirical research elucidating the essence of *Zhongtai* strategy from a management perspective, let alone in the field of IB. And how entrepreneurial SMEs could leverage middle platforms from digital platform ecosystems to facilitate their internationalization.

Therefore, it is necessary to investigate more precisely to elucidate the essence of *Zhongtai* strategy from a management perspective and explicate the mechanism of internationalization among SMEs who play roles as participant complementors in a digital platform ecosystem. Hence, this research approaches the following questions: ***Research Question 1:*** *What is exactly Zhongtai strategy?*; ***Research Question 2:*** *How do middle platforms enable entrepreneurial SMEs to internationalize?*

2. Literature Review

2.1. Internationalization through Digital Platforms

Internationalization is a significant business strategy for firms (Liu et al., 2022). Though there have been substantial firms that realize internationalization through digital platforms in practice, it is still immature

regarding academic IB research (Wu, Liu & Song, 2021). Extant IB research on digital platforms has extensively focused on the main drivers of improving international performance from an overall perspective, i.e. decreasing transaction costs for the international market (Sinkovics, Sinkovics & Jean, 2013), alleviating cultural, administrative, geographic, and economic (CAGE) distances that act as user adoption barriers (Shaheer & Li，2020), enhancing the direct connections with international customers (Manyika & Lund，2016), enabling firms' virtual networking capability (Sigfussopn & Chetty, 2013), and endorsing reputation (Hong & Pavlou，2017； Lehdonvirta et al.，2018). Although these studies are instructive, some key issues have not been thoroughly studied, which needs a further in-depth investigation, for example, the key mechanisms and contingencies of international competitive advantage impacted by the involvement with digital platforms.

Besides, extant literature has extensively explored the internationalization of platform owners, paying little attention to the internationalization of platform participants (Wu et al., 2021). Entrepreneurial SMEs who play roles as participant complementors in a digital platform ecosystem provide an alternative lens to research the mechanisms of internationalization through digital platforms. Digitalization offers unprecedented opportunities for entrepreneurial SMEs, whereas many entrepreneurial SMEs lack resources and capabilities or suffer from inertia, which hampers these opportunities (Cenamor et al., 2019).

2.2. Middle Platforms Management

Alibaba, inspired by Supercell's organizational structure and development model, took the lead in proposing the concept of middle platform management in the IT industry and raised it to a strategic level (Zhang & Hou, 2020). Middle platforms originating from Service-Oriented Architecture (SOA) are positioned as support platforms providing an agile response to front-end applications in the form of a set of reusable capabilities and laying strong foundations of back-stage platforms (Zhong, 2017). Chen et al. (2019) claim that middle platforms build enterprise-level shared service capability through the abstraction of business, data and technology, which eliminates the barriers between various business departments and various subsidiaries. Based on middle platforms, front-end applications for end consumers and customers can be developed agilely to meet the ever-changing front-end needs of various

personalized characteristics, which facilitates digital transformation (Zhong, 2017). The concept of middle platforms has become prevalent in the IT industry only in recent years, and there have been until now few studies on this topic in either industry or academia (Zhang & Hou, 2020). It is promising to conduct an in-depth investigation on the essence of middle platforms and the mechanisms of platform innovation enabled by middle platforms.

3. Methodology

An exploratory single case study approach (cf. Eisenhardt, 1989; Yin, 2009) was adopted, as it enables an in-depth understanding of the complex and novel phenomenon in the middle platforms enabling entrepreneurial SMEs with capabilities of internationalization. The study was underpinned by abductive reasoning where the researchers iterated between extant theory and emergent data (Kovács & Spens, 2005). The unit of analysis focussed on the actors participating in the cross-border digital platform, including both platform owner and platform complementors. The sampling selection criteria were based on extreme case sampling and typical case sampling. Firstly, Alibaba Group was selected as the extreme case organization, which was the first to propose *Zhongtai* strategy and an extremely successful giant platform owner. Then, AliExpress was selected as the typical case platform, which provided a cross-border middle platform for entrepreneurial SMEs and enabled them the capability of internationalization.

The research process should involve a continuous review and refinement of the framework of internationalization through *Zhongtai* strategy among entrepreneurial SMEs with the emergence of data, which is the underlying logic of the abductive research approach (Dubois & Gadde, 2002). The process design will follow the theory-extending process proposed by Voss et al. (2015). Our research followed a three-phase approach. First, the prototype of the interview protocol was developed based on the literature and refined with feedback from both academics and practitioners. Second, pilot interviews were conducted and archival documents were collected with AliExpress in 2022. A further amendment was developed for the protocol to mitigate the ambiguities between academics and practitioners. Third, we will continue investigating AliExpress until achieving data saturation, and this is currently where we are. Meanwhile, the case study protocol was kept updated iteratively in light of the emergent data and

field notes. The abductive way to develop the protocol was appropriate, as we investigated a nascent phenomenon of the middle platform.

4. Findings and Discussion with Pilot Study

4.1 The Essence of *Zhongtai* Strategy

The findings point out that the expression of *Zhongtai* is similar to the concept of *Guanxi,* which evades direct translation as these terms contain a diverse range of meanings. From an organizational management perspective, *Zhongtai* can be regarded as a managerial philosophy of middle office management in the age of digital transformation. Meanwhile, from the ISs perspective, Zhongtai can be designated as a middle platform that provides a novel design and framework for system architecture. *Zhongtai* in this research mainly refers to the managerial strategy of enabling organizations with the capability of reusing and sharing from an ecosystem-level perspective. The strategic goal of *Zhongtai* is to *"strengthen the platforms and lean the applications"* with SOA. This means diversifying the front-end applications with agile and lean operations and laying strong foundations on middle platforms and back-stage platforms. On the other hand, middle platforms constitute the physical presence of *Zhongtai* strategy, and serve as support platforms (bridges) between the front-end applications and back-stage platforms, as shown in Appendix I. Middle platforms provide an agile response to front-end applications and integrate the public and reusable components from the back-stage platforms. *Zhongtai* transformation entails the processes of digital transformations of building and upgrading business, data, and technological middle platforms.

4.2 Internationalization among Entrepreneurial SMEs through *Zhongtai* Strategy

With the advent of advanced technologies and digital platforms, the needs of the international market become more dynamic and ever-changing, which requires solutions of more personalized customization. Meanwhile, the competition in the international market becomes faster clock-speed and keener, which makes international trade through cross-border digital platforms in a red sea environment of a pricing war. These lead to higher requirements of product quality and brand equity in cross-border digital platforms, along with trust issues in the online marketplace. These changes make entrepreneurial SMEs more challenging regarding internationalization. Because internationalization through digital platforms

requires digital platform capability, network capability, and ambidexterity. While many entrepreneurial SMEs lack resources and capabilities or suffer from inertia. However, platform owners are potentially able to assist the front-end entrepreneurial SMEs in providing required back-stage resources and developing these capabilities according to ecosystem-specific advantages.

This research empirically shows that the capability of enabling front-end entrepreneurial SMEs to achieve superior international performance is highly positively related to the platform owner's *Zhongtai* strategy. *Zhongtai* strategy enables front-end entrepreneurial SMEs with fast clock speed and large scale of product/service innovation by achieving both economics of repetition and scope. Moreover, *Zhongtai* strategy enhances operations efficiencies through an agile and lean approach, which dramatically reconciles the problems of data islandization and "chimney-like structure" functional silos. Furthermore, *Zhongtai* strategy expands the network effects of front-end entrepreneurial SMEs, which endorses the online reputation of not only cross-border digital platform owner but also platform complementors.

The findings also indicate that the extent of the digital transformation of various middle platforms facilitates the execution of *Zhongtai* strategy. Digital transformations of middle platforms predominantly consist of the constructions and iterations of business, data, and management middle platforms. Each digital transformation of middle platforms contributes to the capability of enabling front-end entrepreneurial SMEs to superior international performance respectively, which is shown in Appendix II. For example, the constructions and iterations of the business middle platform lead to superior international performance with product/service innovation, and so on with the data middle platform to lean operations and management middle platform to endorsed reputation.

Overall, this research will be the pioneering academic paper to investigate how *Zhongtai* strategy enables front-end entrepreneurial SMEs to internationalize. This study develops a theoretical model linking the challenges brought by the emergent cross-border digital platforms, the internationalization empowerment for entrepreneurial SMEs through *Zhongtai* Strategy, and the digital transformation of various middle platforms. This theoretical model indicates several managerial implications for the platform owner to better take ecosystem-specific advantages.

The full reference list and appendix will be provided upon request.

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Has the WFH Experience Improved in the Past Two Years in Hong Kong?

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Extended Abstract

The current exploratory study is a follow-up project of a larger-scale working-from-home (WFH) survey conducted in Hong Kong in 2020. After two years, the COVID-19 pandemic still affects our daily lives in many places like Hong Kong, and many companies are still adopting different WFH arrangements. Hence, based on data collected from 683 respondents, this study aims to examine how WFH experience and preferences have changed after two years. Statistics on how the Hong Kong working populations perceive their work-family balance, job satisfaction, and organisational support are also assessed. The job demand-control model appears to help explain the changes.

Keywords: Working from home (WFH), WFH effectiveness, Work-family balance, Job satisfaction, Organisational support

1. Introduction

The current paper is a follow-up study of a large-scale survey conducted by Wong, Cheung and Lam (2020), which collected responses from 1976 working adults in Hong Kong 2020 regarding their views and experience of working from home (WFH) in Hong Kong. That survey report offered detailed findings about the respondents' WFH preferences, the pros and cons of WFH, and their perceived level of support provided by employers. It has been two years since then. Are employees becoming more adapted to and improving their work effectiveness when WFH? Are the perceived advantages of WFH remain the same? Have the challenges of WFH been resolved or alleviated? Are employers offering better support to employees' WFH arrangements? What is the majority's WFH preference now? The

current exploratory paper will answer the above questions based on a follow-up survey to the respondents in the earlier survey. Furthermore, the WFH impacts on mental well-being and work-family balance have also received much research attention (e.g., Wong, Cheung and Chen, 2020; Wut, Lee and Xu, 2022). Therefore, this paper will also examine this relationship deeper.

2. Literature Review and Findings

2.1. WFH Practices to Continue in Hong Kong

It has been roughly three years since the coronavirus outbreak, and working-from-home (WFH) has been widely practised in many places worldwide. Hong Kong is an international business hub, and most companies did not have a WFH policy before the pandemic (Wut *et. al*., 2022). However, during the pandemic, Hong Kong governments, major banks and large private organisations were pushed to adopt WFH policy. Perhaps due to a rising number of companies adopting WFH arrangements and cost-saving measures to cope with the economic downturn, the current vacancy rate in Hong Kong premium office market has climbed to 12 per cent in June 2022, the highest in almost 19 years (CBRE, 2022). The WFH arrangements will likely continue in the post-pandemic era (although adaptative adjustments in the specific arrangements are expected). Hence, exploring how WFH effectiveness and preferences have changed over the years is essential.

2.2. WFH Preferences and Effectiveness Reported Two Years Ago

Several findings highlighted in Wong, Cheung and Lam (2020), are: i) More than 80 per cent of respondents indicated that they preferred to WFH for one to two days per week when the pandemic is over; ii) the top three advantages for WFH were “get more time to rest” (72%), “reduce work stress” (64%), and “improve work-life balance” (61%); iii) the biggest challenges of WFH was the “lack of office hardware” (66%), and iv) less than half of the respondents (45%) agreed that their “employer (had) provided sufficient support to enable the employee to WFH in an effective manner”. This paper will examine how those major findings have changed after two years.

2.3. Predicted Changes According to the Demand-Control Model

The job demand-control model has been applied to explain employees’ perceived strain and well-being. Specifically, the demand-control model by Karasek (1979) postulates that working with high

demands and low control over job tasks leads to job strain. With more control, employees can often cope with the high job demands better, thereby avoiding strain. Examples of demand factors are time pressure, work complexity and emotional demands. In contrast, control factors are related to employees' ability to decide how job tasks are conducted and use their skills in task execution, also referred to as decision latitude (Karasek, 1979; Karasek and Theorell, 1990).

During the covid period, we believe that employees faced higher demands at the beginning. The potential reasons may include their need to transit from a physical office to a home office (which most of them had never experienced) and handle ad hoc non-work related matters when WFH (e.g., taking care of kids or infected members). Meanwhile, the WFH option can be considered a job control factor because employees have higher autonomy over their life (e.g., higher flexibility in the fashion of work).

To enhance employees' WFH productivity, employers should have provided better support to employees (i.e., lower demand and higher control). Over the past two years, employees were also likely to have become accustomed to this practice and made necessary arrangements to improve their WFH experience and effectiveness. Hence, we predict the current round of study would identify an increase in the level of agreement to the advantages, fewer challenges, and higher preferences towards WFH. This is in line with the Great Resignation trend identified by many recent studies, which found that more and more employees are resigning from their current job because they are looking for greater flexibility at work (e.g., flexible workplace and work time) (World Economic Forum, 2021).

3. Methods

Data for this study was collected via an online survey. The questionnaire was developed based on the items used two years ago (Wong, Cheung and Lam, 2020). Additional measurement scales that assess job satisfaction (three-item scale by Price and Meuller, 1981), work-family balance (six-item scale developed by Carlson *et al.* (2009), and organisational support (three-item scale developed by Eisenberger *et al.*, 2002) were also included to examine these issues deeper.

To investigate the changes in WFH experience and preference, we have sent an email containing the survey links (for Traditional Chinese and English versions) to 1600 respondents who provided their

email addresses in the first round of the survey two years ago to solicit their participation in the current study. The survey was conducted for three weeks in May 2022. Finally, we received 683 usable responses, resulting in an effective response rate of 42.7%.

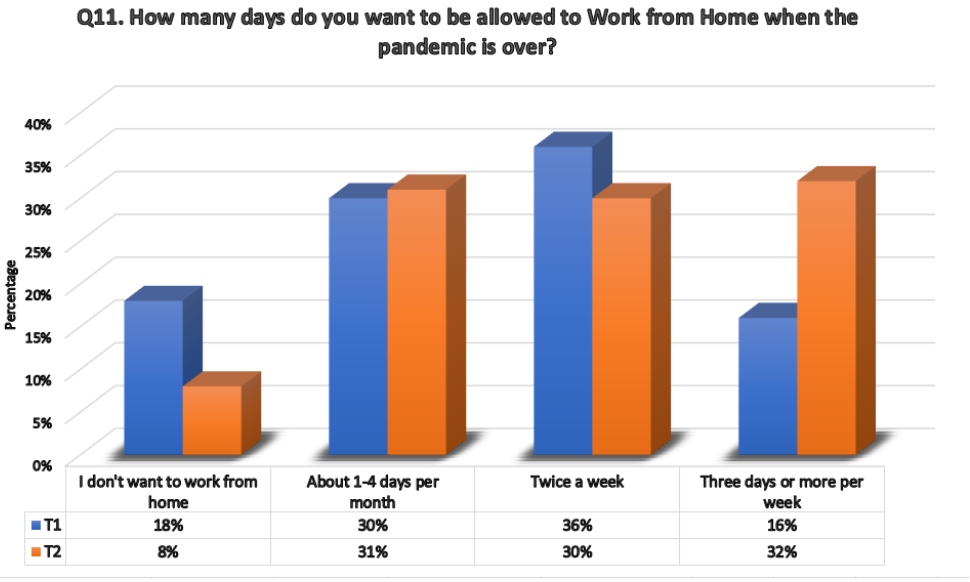
4. Findings

This section provides a brief summary of the key findings in the study, comparing with those reported by Wong, Cheung and Lam (2020) two years ago.

4.1. Higher Preference in WFH

As shown in Figure 1 below, the WFH preference has grown significantly after two years (T1: in 2020; T2: in 2022). The percentage for "*(WFH) for three days or more*" has doubled. Furthermore, over 90% (i.e., 10% increase) of respondents have preferred WFH for at least 1 to 2 days.

Figure 1. Changes in WFH Preferences



4.2. Changes in the Perceived Advantages of WFH

Although "getting more time to rest" is still the top advantage of WFH, the percentage of agreement has slightly reduced by 5%. It is disappointing that "reduce work stress" has lost its support by 15%, but "improve work-life balance" remains one of the most agreeable WFH advantages. It is also worth noting that there is an increase of 11% in "achieved better concentration" when WFH. See Table 1 for details.

Table 1. Percentage of Agreement to WFH Advantages

	2020	2022	% Difference
Get more time to rest	72%	67%	-5%
Reduce work stress	64%	48%	-15%
Improve work-life balance	61%	60%	-1%
Bring a better quality of life	58%	59%	1%
Get more time to work	53%	54%	0%
Get more time to exercise	51%	50%	-1%
Maintain a better relationship with family members	49%	56%	6%
Improve work efficiency	29%	30%	1%
Achieve better concentration	28%	38%	11%

4.3. Changes in the Perceived Challenges of WFH

It was found that most of the challenges of WFH were reported to be reduced, except for the "*lack of working space at home*", which increased by 8.8% (Table 2).

Table 2. Percentage Agreement to WFH Challenges

	2020	2022	% Difference
Lack of office hardware (e.g., computer, printer, etc.)	66.4%	62.5%	-3.9%
Easily disturbed by household chores during work	65.8%	59.1%	-6.7%
Easily distracted by family members, children and others who live together during work	63.9%	58.1%	-5.8%
Lack of office software (including work-related IT system)	60.2%	55.3%	-4.9%
Can't communicate timely with colleagues	56.6%	51.1%	-5.5%
Lack of working space at home	45.3%	54.1%	8.8%

4.4. Changes in Employee Support

This is encouraging to see that 50% of respondents (i.e., 7% increase) agreed to the statement that *"The employer has provided sufficient support to enable me to work from home in an effective manner"*.

4.5. New Insights on Job Satisfaction, Work-Family Balance and Organisational Support

Over 50% of respondents indicated that they were generally satisfied with their job, achieved work-family balance, and help was available from employers when there was a problem.

5. Conclusion

Overall, the Hong Kong working population showed a higher preference for WFH. Although "reduced work stress" is no longer a top reason for WFH, more people agreed that they achieved better concentration when WFH. Respondents also appear to have dealt with the WFH challenges better than before, perhaps due to the better support provided by employers now. Among the new measurement scales included in this study, we also found that most respondents agreed that they achieved work-family balance, were satisfied with their job, and agreed that organisational support was generally

available. More detailed findings will be presented at the conference.

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Research on the Evaluation Index System of Public Welfare Projects on Social Benefits - A Case Study of Social Governance Projects Competition in Chancheng District of Foshan City

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Research on the Evaluation Index System of Public Welfare Projects on Social Benefits -- A Case Study of Social Governance Projects Competition in Chancheng District of Foshan City

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Extended Abstract

The economic evaluation of enterprise investment projects is mainly based on financial evaluation, while the economic evaluation and social benefits of government investment in public welfare undertakings are mainly based on national economic data. This research comprehensively uses the materials and data of surveys and interviews, combines national (Standardization benefit evaluation. Part 2: General principles of social benefit evaluation) and international (ISO 26000:2010 Guidance on Social Responsibility) standards for public welfare project management and evaluation, by applying Social Return on Investment: SROI as an evaluation method, analyzes the social benefits generated by the public welfare projects funded by the Chancheng District Government through the Social Governance Project Competition.

Keyword: Public Welfare Projects, Social Benefits, Social Return on Investment (SROI), Indicator System

1. Introduction

The development of social public welfare and charity in China has distinctive nature of socialism with Chinese characteristics. Public welfare and charities were mainly embodied in social relief. After the Chinese economic reform and opening-up, China has been profoundly transformed, establishing and

improving public welfare and charity security system that met the needs of its own economic and social development. It also provided legal protection for promoting the steady development of public welfare and charities.

2. Main Body

2.1. Literature

Project management requires scientific methods, efficient information delivery, and consideration of stakeholders (Kerzner, 2017). The economic evaluation of enterprise investment projects is mainly based on financial evaluation, while the economic evaluation and social benefits of government investment in public welfare undertakings are mainly based on national economic data (Shahidi, Ramraj, Sod-Erdene, Hildebrand, & Siddiqi, 2019). Social return on investment (SROI) is a performance measurement tool to understand public service (Millar & Hall, 2013). Nicholls, Lawlor, Neitzert, and Goodspeed (2009) consider the net present value (NPV) method as a method for evaluating investment options by using the total present value of net cash benefits amount and the net cash investment amount to calculate NPV, and then evaluating the investment options based on the magnitude of the NPV.

2.2. Framework

The study explores how the local government and social organizations have jointly explored a new model of social grassroots governance in the new era by taking into account local conditions and the actual needs of people's livelihood, and by utilizing the effectiveness of social welfare projects, which is of practical significance to help needy groups, promote common prosperity, improve the standard of social governance, and promote the modernization of social governance. At the same time, the professionalization of charitable services and the diversification and internationalization of charitable activities have increasingly become the basic trends of future development, which are of positive significance for local public welfare governance. The research framework is shown in the following figure 1.

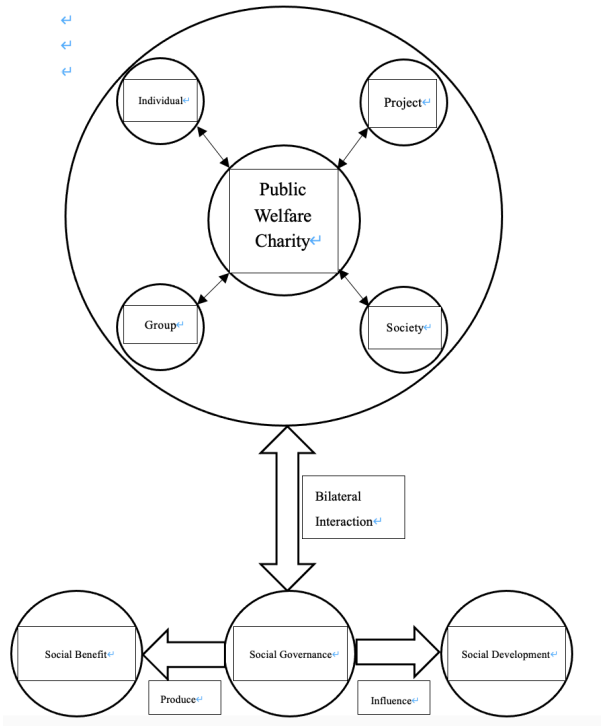

Figure 1. The relationship between the development of public welfare charity and social governance

2.3. Method

For the social benefit evaluation of projects, SROI has its specific advantages compared with other evaluation methods. It evaluates costs and benefits based on stakeholder considerations and avoids wasting resources (Shahidi et al., 2019). Pratono, Suyanto, Marciano and ZURBRÜGG (2017) used the SROI method to study the social investment return of grass-roots community enterprises, which has a certain enlightenment significance for our research. In addition, this case study uses the in-depth interviewing method to collect rich data on the Social Governance Project Competition in Chancheng District, Foshan City.

Therefore, based on the Social Governance Project Competition in Chancheng District, Foshan City, the study analyzes the social benefits of the eight sub-projects funded by the Project Competition from 2019 to 2021 in the areas of social governance and legal construction, urban and rural community governance, corporate social work, new citizen services, public services, specific population services, and other social governance innovations, based on national and international standards of public benefit project

management and evaluation.

2.4. Results

According to the types of projects funded by the Social Governance Project Competition in Chancheng District, Foshan City, the number of direct recipients, and the service shining point, etc., combined with the characteristics of the case study methodology in terms of research design, data collection, and analysis process (Cooper, Camic, Long, Panter, Rindskopf, & Sher, 2012; Yin, 2012), and the interview research (interview transcript), we compiled Case A, Case B, and Case C, which are the same funding type as "Promoting the Deep Integration of Party Development, Grassroots Governance, and Peace Building", and the project profiles of these three cases.

To carry out the standardized evaluation of the social benefit evaluation of public welfare projects, we should develop a general evaluation plan and start the evaluation work in accordance with the evaluation process determined by the general evaluation plan. The evaluation process includes the following seven steps: (1) Determination of the standardization evaluation target of social benefit evaluation of public welfare projects; (2) building a standardized evaluation index system for social benefit evaluation of public welfare projects; (3) selection of standardized evaluation methods and judgment basis for social benefit evaluation of public welfare projects; (4) data collection; (5)analysis of evaluation results; (6)writing evaluation reports; (7) application of evaluation results.

Based on the standardized indicators of social benefit evaluation of public welfare projects, the results are calculated by NPV and SROI. Evaluation-type SROI or staged SROI analysis is carried out, which is helpful to evaluate or understand the implementation of public welfare projects, and provide suggestions for funders or executors, or revise relevant decisions to provide a clearer and more intuitive numerical reference.

3. Conclusion

Net Present Value (NPV) is the difference between the discounted value of future cash flows generated

by investment and the cost of the project investment. The social return on investment (SROI) for Case A, Case B and Case C is much closer. In Cases A, B, and C, the social return on investment (SROI) of the projects was affected by the amount of funding, the cost of materials, the cost of promotion, project publicity cost, the cost of staffing, the benefit of volunteers to the projects, and the benefit of service recipients through participating in the project.

Table 1. Case A/B/C NPV vs. SROI (3rd year)

3rd year	Case A	Case B	Case C
NPV	¥186,962	¥120,716	¥147,074
SROI	¥2.25	¥2.21	¥2.23

First, the number of direct service recipients/beneficiaries affects the social return on investment (SROI) of public welfare projects. Second, obtaining the benefits of project-related resources from individuals/collaborators of public relations subjects, affects the social return on investment (SROI) of public welfare projects. Third, the proportion of office staff cost investment affects the public welfare projects' social return on investment (SROI).

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Mitigating Conflict-induced Negative Emotions:

Implicit Conflict Belief and Conflict Management Style.

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Extended Abstract

Conflict always induces unpleasant feelings on the part of the involved parties. If the conflict remained unresolved, it may impose an adverse effect on one's well-being. The current research explores to what extent individual conflict-related belief and conflict management styles would mitigate the effect of conflict on arousing negative emotions. Two-hundred and ninety participants took part in a 6-day diary study. Results showed that conflict-induced negative emotions were mitigated when individuals believed that conflict could be avoided or when individuals believed conflict were inevitable but used a low-yielding/low-avoiding conflict management style. Implications on emotions and conflict management will be discussed.

Keywords: Implicit conflict belief, conflict management style, conflict emotions

Introduction

One of the major undesirable consequences of conflict is that parties involved in a conflict often experience negative emotions that are detrimental to interpersonal and well-being outcomes (Dijkstra et al., 2011). The relationship between conflict and negative emotions can be complicated and vicious – conflict induces negative emotions, which in turn reduce disputants' attention and mental resources to engage in active listening and mutual understanding, further worsening the conflict (Lindner, 2006). More research has been called for studying the link between conflict and emotions to help both academics and practitioners formulate better conflict resolution practices (Nair, 2008). The current exploratory study aims to study the psychological conditions under which the association between conflict and negative emotions would be mitigated.

One of the dominant frameworks in the conflict resolution literature focuses on how different conflict management styles impact on individual's behaviors and emotions (Thomas, 1992). In this literature, a classic typology of conflict management styles consists of five styles, namely forcing, yielding, avoiding, problem-solving and compromising (Rahim, 1983). Prior research has shown that conflict was related to psychological strain and exhaustion when individuals adopted yielding or avoiding management style (Dijkstra et al., 2009). Another factor we explored was the implicit belief of conflict, referred to as the belief that conflict is essentially inevitable as opposed to preventable in an interpersonal relationship (Fu et al., 2020). Previous findings in this new line of research showed that individuals who believe that conflict is inevitable are more inclined to accept a previously arranged dispute resolution system and trust the competence of the person who initiates this arrangement (Fu et al., 2020). Adopting a dispute resolution system may be driven by the motivation to become detached from the conflict, a way through which negative emotions can be buffered (Rispens, & Demerouti, 2016). To explore the effects of the above two individual factors on conflict-induced negative emotions, we ran a 6-day diary study using online participants.

Method

Two-hundred and ninety American (Age: mean = 36.3, SD = 11.3; Gender: male = 54.9%, female = 42.8%, others = 2.3%) took part in this study on Day 1. By Day 6, 173 of them with usable data remained in the study. On Day 1, the participants filled out the measure for implicit conflict

belief, alongside with some demographic information. On subsequent days (Day 2 to Day 6), they filled out an identical set of questionnaires that measured conflict level, conflict management styles and emotions they experienced that day.

Implicit Conflict Belief. It was assessed using an 8-item measure developed by the author(s) (Fu et al., 2020). Participants indicated their agreement on each item on a 6-point Likert scale (1 = "strongly disagree"; 6 = "strongly agree").

Perceived Conflict Level. It was measured by one single item: "How much interpersonal conflict have you had today?". Participants responded on a slider scale of 0 to 10.

Conflict Management Style. Five conflict management styles, yielding, compromising, forcing, problem-solving and avoiding, were measured by the scale developed by De Dreu et al. (2001; 20 items). Each style was measured by four items. Using a 5-point Likert scale (1 = "Not at all"; 5 = "Very much"), we instructed participants to state how they approached tasks with others on the day they filled out the survey.

Positive and Negative Emotions. Positive emotions comprised joyful, lively, happy, cheerful and proud while afraid, sad, miserable, mad and scared made up the measurement of negative emotions (Ebesutani et al., 2012). We asked the participants to indicate to what extent they felt each of the emotions using a 5-point Likert scale (1 = "Not at all"; 5 = "Extremely")..

Results

We ran confirmatory factor analysis on the study variables to ensure that the theory-derived factor structures fit the empirical data. Overall speaking, results showed that the fit indices were satisfactory, except for a few measurement time points for some of the scales. To explore how conflict-induced emotions (positive or negative) were affected by implicit conflict belief and each of the conflict management styles, we ran separate multi-level models with emotions (positive or negative) being the dependent variable and conflict level, implicit belief and each conflict management style as the independent variables. Given the presence of repeated measures of some study variables (i.e., conflict level, emotions and conflict management style) and a time-invariant variable (i.e., implicit conflict belief), we took a structural equation modelling approach to analyse our longitudinal data (Hamaker & Muthén, 2020). In the two-level modelling, time-varying variables

were decomposed into between-person and within-person components, independent from each other, using the latent-mean centering approach (Asparouhov & Muthén, 2019). We adopted the latent moderated structural modelling (LMS) method by Klein & Moosbrugger (2000) to model the effects of the latent variables using maximum likelihood estimator with robust standard errors (Muthén & Muthén, 1998-2017).

Our results showed that overall speaking, there was a positive association between conflict level and negative emotions, which was similar to previous findings (Greer & Jehn, 2007; Desivilya, & Yagil, 2005). This relationship, however, was mitigated by the interactive effect between implicit conflict belief and yielding/avoiding conflict management style. Conflict-induced negative emotions were mitigated (1) when individuals believed that conflict was preventable regardless of the level of yielding/avoiding conflict management style OR (2) when individuals believed conflict was inevitable but used a non-yielding/non-avoiding conflict management style. These results suggested that conflict does not always bring harmful effects on emotions. Specific combination of personal beliefs and conflict management styles may provide a psychological shield for the conflict parties from engaging in an emotional downward spiral that often occur in interpersonal conflict.

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Innovation Gains from Backward Versus forward Participation in Global Value Chains: Evidence from Cross-country Cross-industry Data

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Innovation gains from backward versus forward participation in global value chains: Evidence from cross-country cross-industry data

Abstract: How does participation in global value chains (GVCs) influence the innovation capabilities of manufacturing industries in advanced and emerging economies around the world? Scholars have rarely addressed this question. The ongoing debates in the large body of GVC, IB and innovation research at national- and firm-level further blur the picture. To reconcile the divergent arguments and evidence, we argue it necessary to test for the differential roles of GVC participation mode in innovation capability building and the contingencies that can drive the significance and direction of the roles. Drawing on organizational learning theory and lagged data on 23 manufacturing industries across 66 economies participating in GVCs over 1995-2017, we find that backward GVC participation (importing intermediate goods and services from other countries to produce and export final products) has an inverted U-shaped impact on industry-level innovation capability, whereas forward GVC participation (exporting domestic value-added content to other countries for their backward participation) has a positive effect. The differential effects are stronger in technologically intensive industries, emerging economies, and the period after global financial crisis 2007-2008.

Keywords: Global value chain (GVC); backward GVC participation; forward GVC participation; Organizational learning; Innovation

Extended Abstract

The rise of global value chains (GVCs), "characterized by companies' fine slicing of the production process across different countries and specializing in specific tasks (Pietrobelli, Rabellotti, & Van Assche, 2021: 327)", has substantially reshaped the international trade and global economy since the 1990s. GVC trade in intermediate goods and services produced by disaggregated and geographically dispersed actors has become increasingly important with respect to final goods (World Bank, 2020; Zhan, 2021). The governance, coordination, and value creation in GVCs by multinational enterprises (MNEs)—the core actors leading and orchestrating GVCs in the eye of IB scholars—have also become more sophisticated (Benito, Petersen, & Welch, 2019; Kano, Tsang, & Yeung, 2020; Strange & Humphrey,

2019). Concomitant with this trend, scholars from diverse disciplines have investigated the governance of GVCs (Gereffi, Humphrey, & Sturgeon, 2005; Kano, 2018; McWilliam, Kim, Mudambi, & Nielsen, 2020; Strange & Humphrey, 2019), the impact of GVCs on national and regional economic growth (Buckley, 2009; Coe & Yeung, 2019; Gereffi, 2018), the implications of GVC for firm competitive advantage (e.g., productivity, economic upgrading, and innovation) (Alcacer & Oxley, 2014; Humphrey & Schmitz, 2002; Morrison, Pietrobelli, & Rabellotti, 2008; Mudambi, 2008; Pietrobelli & Rabellotti, 2011; Turkina & Van Assche, 2018), among other themes.

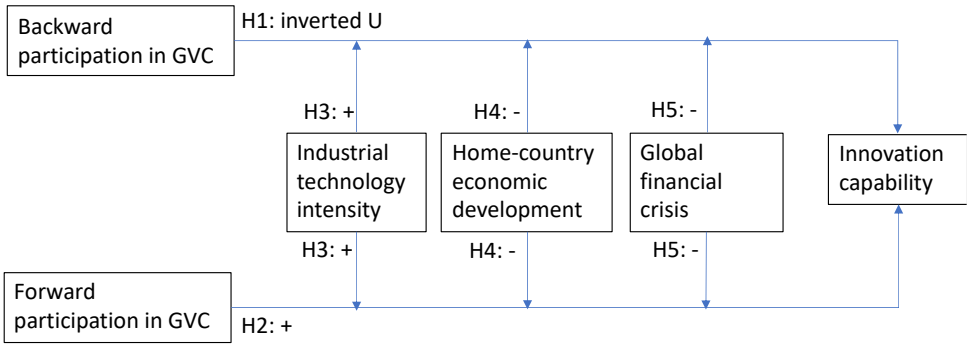
Nevertheless, the relationship between GVC participation and industry-level technological innovation capability remains unclear in the rich literature. Aside from the small number of studies at industry level, the ongoing debates in the far larger body of national- and firm-level research further blur the picture. On the one hand, many scholars have theorized and supported that emerging economy firms can accumulate production and innovation capabilities by participating in GVCs (Liang, 2017; Pietrobelli & Rabellotti, 2011), thanks to multiple learning mechanisms in the chains such as learning-by-exporting (i.e., gaining knowledge unavailable in the home market) (Grossman & Helpman, 1993; Salomon & Shaver, 2005), learning-by-doing (i.e., internal learning from direct production experience) (Arrow, 1962), learning-by-doing spillovers (i.e., external vicarious learning of other firms from a focal firm's learning) (Irwin & Klenow, 1994), learning from international knowledge transfer (Lema, Quadros, & Schmitz, 2015; Pack & Saggi, 2001), among others. On the other, abundant evidence shows that these learning mechanisms have been ineffectual or run counter into expectation in emerging economies (Alcacer & Oxley, 2014; Horner, 2022), due to the low applicability of advanced economies' technologies to emerging economies (Fu & Gong, 2011; Li, 2011), the MNEs' effective protection of proprietary technologies and knowledge (Breznitz & Murphree, 2011; Zhang, Li, Hitt, & Cui, 2007; Zhang, Li, & Li, 2014), the crowd-out effect of foreign direct investment (FDI) on local firms (Chang, 2008; Spencer, 2008), the weak absorptive capacity of local firms (Fu, 2015; Li, 2011; Zhang, Li, Li, & Zhou, 2010), the overreliance on foreign innovations and lock-in of local firms in production capabilities

(Altenburg, Schmitz, & Stamm, 2008; Awate, Larsen, & Mudambi, 2012; Horner, 2022; Li, Capone, & Malerba, 2019), and etc.

With respect to advanced economies that are primary outsourcers of value-creation activities to emerging economies, scholars also diverge in the association of their MNEs' innovation performance with GVC participation. Most IB scholars hold that GVC participation strengthens firm-specific advantage of advanced economy MNEs in two ways, (1) increasing intangible assets by investing the resources that would otherwise be allocated to production if not offshoring in R&D—the asset-based theory (Buckley & Casson, 1976; Dunning, 1998), and (2) providing access to foreign knowledge and skills to boost innovation capabilities further—the asset-seeking theory (Anand & Delios, 2002; Wesson, 1999). However, increasing research points out little or even negative effect of GVC participation on advanced economy MNEs' innovation performance, which is caused by the challenges and costs entailed in setting up GVCs (Van Assche, 2017), their insufficient absorptive capacity to capitalize on foreign knowledge (Penner-Hahn & Shaver, 2005), low barriers for local firms to imitate their innovations (Zhang, et al., 2014), the growth of local firms into their strong competitors decaying their profitability from innovation (Teece, 1998; Zhang, et al., 2014), and the importance of co-location of pre-production and production activities to product innovation (Buciuni & Finotto, 2016; Pisano & Shih, 2012).

To reconcile the mixed findings and reveal how GVC participation impacts industry-level innovation capability, this paper argues it necessary to test for the differential roles of GVC participation mode in innovation capability building and the contingencies that can drive the significance and direction of the roles. Built on organizational learning theory (Cohen & Levinthal, 1989; 1990; Levinthal & March, 1981; Levinthal & March, 1993), we posit that the two GVC participation modes—backward versus forward—constitute two different contexts—supplier-driven versus local firm-centered—for participating firms' learning, influencing their learning and adaptation processes and subsequently leading to different levels of innovation capability. We further propose that the context dependence of learning is subject to technological environment (Levinthal, 1998), home-country's economic development (North, 1994;

Vendrell-Herrero, Darko, Gomes, & Lehman, 2022), and exogenous shocks in international business environment (Pedersen, Larsen, & Dasí, 2020). Below lists our theoretical framework.



We tested our hypotheses in a sample of 23 manufacturing industries across 66 countries participating in GVCs over 1995-2017. Using (1-year to 4-year) lagged data on innovation capability and GVC participation, we found that backward GVC participation has an inverted U-shaped impact on industry-level innovation capability, whereas forward GVC participation has a positive effect. The differential effects are stronger in mid/high-tech industries, emerging economies, and the period after global financial crisis 2007-2008.

Our study responds the increasing call for integrating organizational learning theory more deeply and dynamically in IB research (Luo, 2020; Pedersen, et al., 2020). We reveal the boundaries of learning (Levinthal & March, 1993; Pedersen, et al., 2020) by conceptualizing and testing GVC participation mode as learning context. Backward GVC participation forms a supplier-driven learning context that local firms' learning is constrained by the transferability and quality of intermediate suppliers' knowledge and technologies (e.g., high tacitness, obsoleting technology), such that local firms accumulate capabilities at a diminishing pace and even suffer competence traps. By contrast, forward GVC participation is a local firm-centered learning context that requires a higher level of local firms' per-entry capability than backward participation and facilitates local firm's learning and co-evolution with the export market, thereby enhancing local firms' innovation capability over time.

Our study also contributes to the intersection of GVC, IB, and innovation literature. It uncovers another factor influential to learning mechanisms and outcomes in GVCs—GVC participation mode

(backward versus forward), aside from GVC governance form (Gereffi, et al., 2005; Humphrey & Schmitz, 2002; Pietrobelli & Rabellotti, 2011) and GVC structure (Buciuni & Pisano, 2021). Identifying the differential roles of three-level contextual factors (technology, national, and international) in the relation between GVC participation and innovation capability development, our study also enriches understanding of environmental and organizational complexity and contexuality in IB and innovation (Pedersen, et al., 2020; Teagarden, Von Glinow, & Mellahi, 2018). Moreover, our multi-level model links the extant GVC and IB research that bifurcates between emerging economies and advanced economies, between macro-level and firm-level (Benito, et al., 2019; Kano, et al., 2020), and infer the necessity to integrate GVC and innovation systems research (Jurowetzki, Lema, & Lundvall, 2018; Pietrobelli & Rabellotti, 2011).

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Does Financial Structure Matter for Firm Innovation Activity?

An Empirical Study Based on Chinese ICT Industry

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Does financial structure matter for firm innovation activity? An empirical study based on Chinese ICT industry

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Abstract

This research mainly investigates the relationship between R&D investment, cash flow, and local financial structure based on Chinese ICT firm cases. Along with the previous study, R&D investment is found to be positively related with cash flow. However, the empirical result suggests equity market does not relief firm financial constraint in R&D investment, but bank-oriented system does by providing easier access to external finance. Also, state ownership and degree of firm internationalization are relatively more effective to alleviate the financial constrain in R&D investment. The finding suggests further reform of Chinese financial markets are needed to support firm innovation and thus contribute to the real economy.

Keywords: innovation, cash flow, financial structure

1.Introduction

Innovation is critical for firm to maintain competitiveness and achieve long-term success, so as to contribute to economic growth of the country. In the firm level discussion, scholars have achieved remarkable insights in the determinant of firm innovation, such as government subsidy (e.g Hong, J., Feng, B., Wu, Y., & Wang, L. 2016), technology or knowledge spill over (e.g. Howell, A. 2020), and open innovation strategy (e.g. Filiou, D., Gkypali, A., & Tsekouras, K., 2017). However, innovation is risky as it is a long cycle, high expenditure, output uncertain activity. Hence financial constraint is an important determinant of firm innovation activity (and output). To the author's best knowledge, only a few empirical studies test the relationship between cash flow and R&D investment（e.g. Beladi, H., Deng, J., & Hu, M, 2021).

This paper is positioning in the financial determinant of firm R&D investment. Rather than focusing on the debate about the role of cash flow uncertainty, this study investigates the role of macro-

economic factors, i.e, financial structure, in the financial constraint of firm R&D investment. Also, by comparing with other internal booster of innovation (state capital and internationalization), the findings further indicate the government support and internationalization are more effective means to relief financial constrain of firm innovation in China, which suggests further reform of financial market is needed to contribute to real economy.

2. Literature review

In the micro-level innovation study, many studies are focusing on the factors that influence knowledge flow, such as industry relatedness (e.g. Howell, A. 2020), open innovation strategy (e.g. Filiou, D., Gkypali, A., & Tsekouras, K. 2017), and network (e.g. Acemoglu, D., Akcigit, U., & Kerr, W. R. 2016). Researcher only include financial resource as control variable, the effect of financial constrain is not directly investigated.

Closely related with innovation, a few studies in finance area start to examine the effect of cash flow on R&D investment. For example, Beladi, H., Deng, J., & Hu, M. (2021) find that firms with higher cash flow uncertainty invest more cautiously in R&D innovation, whereas firms with lower cash flow uncertainty invest more boldly in R&D innovation. These research paves the road to understand firm innovation by focusing on financial constrain.

The financial determinant of firm R&D investment is closely linked with the discussion on whether financial system matters for economic activities. For example, Wang, X. (2022) have discussed the effect of a financial market development and structure on innovation of a country. Generally, researchers agree that financial development (FD) meet the different needs of different stages of the real economy, and FD has a significant impact on economic growth (Liu and Zhang,2018). However, different views have emerged about the role of financial structure (FS). Some argue that market-based financial structures have advantages over bank-based ones (and vice versa) or that financial structures are irrelevant to economic growth. For example, Carlin and Mayer (2003) believed that due to the great differences in the development of the international financial system, these economy-led studies may lead to wrong conclusions about the role of financial structure on economic growth. They found that there was a strong correlation between financial structure and economic growth. And the structure of a country's financial system can also be inferred from the characteristics of its industries. Baum et al. (2009) argue that the structure and scope of a given country's financial system may be a key factor in the financial constraints of firms. Their empirical model proved that the impact of cash flow on cash holding may be affected by the structure of the financial system. Companies located in the market financial system are more likely to be subject to financial constraints. Therefore, reducing financial constraints to achieve economic growth depends on financial structure as well as financial development.

A few cross-country analysis have pointed out the importance of financial system in innovation at country level, the conclusion they get about FD are generally consistent, but few study have discussed the role of FS. For example, Wang, X. (2022) argue both equity market liberalization and outward FDI by domestic firms have sizable effects on innovation. Zhu etc (2020) find out higher level of FD have

a smaller positive or insignificant effect on innovation.

Based on the economic literature, financial structure should be a main factor that leads to different level of financial constrain in firm activity, which is the micro-level component of economic activity. Aiming to contribute to the understanding of financial constrain in firm innovation, this research combine macro-level factor- financial structure, and answer the question: Does financial structure matter for firm innovation activity?

3. Empirical implementation

This section presents the model and data used to examine the impact of FS on firm innovation.

3.1 Model design

This research applies panel data regression. R are used for the analysis. For panel data regression models, there are three types: fixed effects models, random effects models and mixed effects models, and in this paper a two-way fixed effects model is used. Because the sample in this paper is all companies in the Chinese electronic information industry, which is a group rather than a randomly selected sample, the fixed effects model is appropriate.

the following model are applied in the analysis:

$$rde_{it} = \beta_0 + \beta_1 cf_{it} + \beta_2 fs_{it} + \beta_3 cf_{it} fs_{it} + \beta_4 soe_{it} + \beta_5 soe_{it} cf_{it} + \beta_6 doi_{it} + \beta_7 doi_{it} cf_{it} + \beta_8 age_{it} + \beta_9 size_{it} + \beta_{10} GDP_{it} + \theta_t + \lambda_t + \varepsilon_{it}$$

The macro-level variables use provincial data. The dependent variable is the R&D investment(input) of the enterprise, and the independent variables include the cash flow of the enterprise, the financial structure, the degree of internationalization and the State ownership. Moreover, our model also includes the interaction between cash flow and the State ownership, the interaction between cash flow and internationalization, and the interaction between cash flow and FS. The control variables are size of the firm, age of the firm and the GDP of the province. See table 1 for the variable description.

Studies suggest that cash flow can be an important determinant of corporate investment (Castro et al.,), so the model take cash flow as the main factor that constrain/facilitate firm innovation. Since previous research suggest state ownership (Xu, E., & Zhang, H. 2008) and firm internationalization (Piperopoulos, P., Wu, J., & Wang, C. 2018)) facilitate firm innovation, so the model includes cash follow interaction with soe, doi, and fs, which could test whether these factors could improve firm ability to invest in innovation.

3.2 Data

Based on previous research, Table 1 summarizes the definitions and measurements of the variables used in this paper. We use the ratio of total stock market value to bank loans as a measure of FS. By definition, a large value of this measure implies a more market-based financial system, while a small value implies a more bank-based financial system(Liu and Zhang,2018).

Overall, we collected panel data from 21 provinces and 4 municipalities in China from 2015 to 2020. And panel data of 376 companies in China's electronic information industry. The following filters and adjustments were made to the raw data to suit the needs of the study: Excluding companies with missing data on R&D expenditure and number of employees.1944 observations from 324 companies were finally obtained.

The raw data for constructing the above variables are from various sources. The data for provincial stock market capitalization come from the Wind Information database (WIND). The data for bank loans come from the CEIC database. The data of provincial GDP are come from the provincial statistical yearbook(PSY).and the data for other variables are taken from the osris database. The 21 provinces include Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hebei, Henan, Heilongjiang, Hubei, Hunan, Jilin, Liaoning, Ningxia, Shandong, Shanxi, Jiangsu, Jiangxi, Shaanxi, Sichuan, Xinjiang and Zhejiang, and the four municipalities directly under the central government include Beijing, Shanghai, Tianjin and Chongqing.

3.3 Analysis and discussion

3.3.1 Descriptive analysis

Table 2 summarizes the notations, and descriptive statistics for the underlying variables. Table 3 reports the correlation coefficients between the variables. The descriptive analysis indicates cash flow and size are correlated with research and development, with the correlation coefficient of 0.716 and 0.73 respectively. It supports the empirical model we assumed, which suggests cashflow is an important contributor to research and development.

3.3.2 Unit root tests

Table 4 shows the results of the unit root test. From the unit root test graphs, it is known that at 5% level of significance, all samples have p-values less than 5%, which means that, so the samples all are balance.

3.3.3 Regression test result

As shown in Table 5, company cash flow and company size have a significant positive effect on a company's investment in R&D. Specifically, the larger the company's cash flow, the more willing the company is to invest in R&D, and the larger the company is, the more willing the company is to invest in R&D. Also, the degree of internationalization of the company has a positive effect on the company's R&D investment. These findings are consistent with previous study.

However, the interaction of cash flow and financial structure has a significant positive effect on the company's R&D investment. Since financial structure is measured by the ratio of total market value of equities to bank loans, positive sign of the interaction term indicates bank-oriented financial structure relief firm financial constrain in R&D investment, that is, relative to equity market, firm can get easier access to external finance from banking system.

On the other hand, the interaction term of cash flow with the degree of internationalization and state ownership respectively is significantly negative. This indicates state capital and oversea market entry both mitigate financial constraint in R&D investment. The greater coefficient of their interaction with cash flow suggests state capital and oversea market is more effective in alleviating financial constrain compared with local financial system.

4. Conclusion

China has experienced fast economic growth. Among variety of the explanation for China’s growth, innovation have played an important role (Nahm and Steinfeld,2012). This research chooses one of the high-tech industry—ICT industry, and analyze the relationship between cash flow, local financial structure and firm R&D investment. The empirical result suggests the financial constraints on R&D investment varies with the structure of local financial markets. To be specific, bank-oriented financial system benefit firm R&D by providing easier access to external financial resources, which could be attributed to government macroeconomic policy in encouraging firm innovation (such as low interest rate for innovation project). The equity-oriented financial structure worse the financial constraint in R&D investment, this suggests financial market plays limited role in supporting real economy.

The significance of state capital interaction term suggests government support still plays an important role in firm innovation activity, whereas significance of internationalization interaction term suggests international operation alleviate financial constrain, but the specific mechanism is out of the scope of this research.

This research is only based on one high-tech industry in China, further study could expand the industry scope and verify the conclusion achieve by this research. Also, inspired by the debate in finance discussion, future study could further investigate the relationship between cash flow uncertainty and R&D investment by taking into account the interaction effect with financial structure, state capital, as well as internationalization.

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Appendix

Table 1. variable description

Variable	Definition	Measurement	Data Source
fs	financial structure	the ratio of total market value of equities to bank loans	Asian economic database and Wind Information database
cf	Cash flow	Annual cash flow of the business	osiris
doi	Degree of internationalization	Ratio of foreign sales to total sales	osiris
soe	State ownership	Ratio of state-owned shares to total number of shares	Wind Information database
size	size	Total number of employees	osiris
age	age	The number of years the company has been established	osiris
gdp	Gross Domestic product	The final result of the productive activity of all resident units in a country or region over a period of time	Author's calculation using Provincial Statistical Yearbook (PSY)
rde	R & D expense	Company spending on research and development	osiris

Table 2. Notations, and descriptive statistics

variable	*Notation*	*Obs.*	*Mean*	*Minimum*	*Maximum*	*Std.*
financial structure	fs	*1944*	*5.895*	*0*	*8.643*	0.994665721
Cash flow	cf	*1944*	*57242*	*-514553*	*10076534*	303251.8547
Degree of internationalization	doi	*1944*	*0.1748*	*0*	*1.7592*	0.248263947
State ownership	soe	*1944*	*0.01215*	*0*	*0.81*	0.068553834
size	size	*1944*	*3509.7*	*1*	*172410*	10408.47887
age	age	*1944*	*16.2*	*0*	*40*	5.633716299
Gross Domestic product	gdp	*1944*	*61080*	*2579*	*420422*	41333.55759
R & D expense	rde	*1944*	*1.41794*	*21200*	*1166444*	74669.88379

Table 3. Correlation coefficients.

variable	fs	cf	doi	soe	size	age	gdp	rde
fs	1	-0.016	0.072	-0.002	0.026	-0.013	0.153	-0.003
cf	-0.016	1	0.184	0.046	0.557	0.107	-0.10	0.716
doi	0.072	0.184	1	0.020	0.367	0.122	0.156	0.222
soe	-0.002	0.046	0.020	1	0.043	0.131	-0.012	0.088
size	0.026	0.557	0.367	0.043	1	0.098	0.046	0.730
age	-0.014	0.107	0.122	0.131	0.098	1	0.112	0.103
gdp	0.153	-0.010	0.157	-0.012	0.046	0.112	1	0.017
rde	-0.003	0.716	0.222	0.088	0.730	0.103	0.017	1

Table 4. Unit root test

variable	*P-value*	Results
size	*< 2.2e-16*	Balance
age	*6.271e-06*	Balance
doi	*< 2.2e-16*	Balance
soe	*< 2.2e-16*	Balance
rde	*< 2.2e-16*	Balance
cf	*< 2.2e-16*	Balance
gdp	*< 2.2e-16*	Balance
fs	*0.0025*	Balance

Table 5. regression result

variable	Coefficien	Std. Error	t-Statistic	Prob.
cf	8.2506e-01	3.7412e-02	22.0534	< 2e-16 ***
doi	1.3806e+04	6.2973e+03	2.1923	0.02850 *
size	5.0735e+00	1.6886e-01	30.0453	< 2e-16 ***
GDP	-1.3649e-02	1.9297e-02	-0.7073	0.47947
soe	7.5794e+03	1.2953e+04	0.5851	0.55853
fs	-1.1120e+03	6.2572e+02	-1.7771	0.07574 .
Cf:doi	-3.6851e-01	2.6877e-02	-13.7108	< 2e-16 ***
Cf:soe	-3.0407e-01	4.2283e-02	-7.1913	9.8e-13 ***
Cf:fs	8.8165e-02	5.3683e-03	16.4232	< 2e-16 ***
Total Sum of Squares: 2.2373e+12 Residual Sum of Squares: 8.4381e+11 R-Squared: 0.62284 Adj. R-Squared: 0.5437 F-statistic: 294.686 on 9 and 1606 DF, p-value: < 2.22e-16				

Notes:(1)The estimation method is Two-way fixed effect.

(2)***, * and . denote 0.1%,5% and 10% and significance levels, respectively.

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Enhanced Satisfaction-and-Intention Mechanism:

A Chinese Philosophy-based Perspective

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Enhanced Satisfaction-and-Intention Mechanism: A Chinese Philosophy-based Perspective

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Extended Abstract

It is held that the causal effect of customer satisfaction does not always translate to behavioral intentions in full. A missing link can be the culture of a nation that may shape and influence the perception of customers towards a business firm. In China where the concept of noble man (*Junzi*) is deeply rooted in the culture has subtly affected the firm's marketing strategy. Under this premise, the extent of *Junzi* of a corporation as perceived by customers may moderate the satisfaction-and-intention link. Findings from a survey of 422 Chinese customers offered some interesting insights to both theory and practice.

Keyword: Customer Satisfaction, Behavioral Intentions, Junzi Corporation, Moderator

1. Introduction

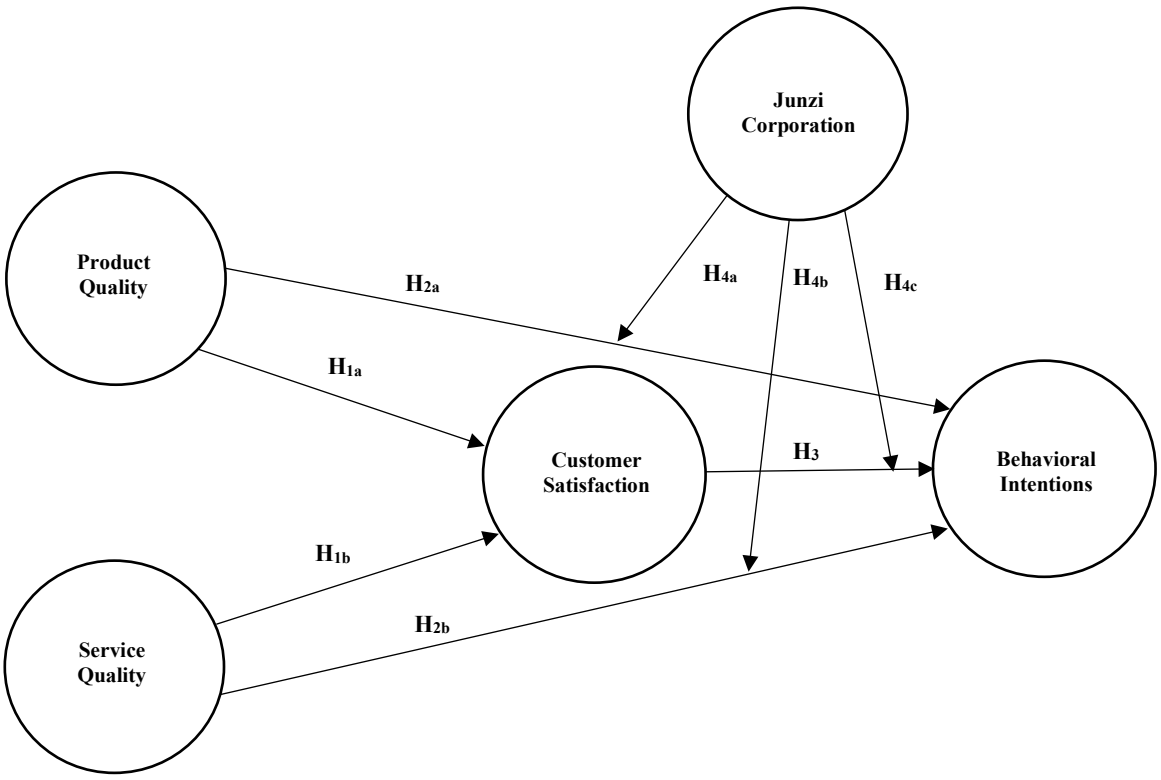
Does customer really exhibit a strong intention of favorable behaviors towards the firm they satisfied? It is argued that this relationship is moderated by a number of situational factors and characteristics of customers including the culture factor (Kwong et al., 2015; Tian et al., 2020). This paper aims to examine how much the firm is seen as a *Junzi* corporation that may moderate the causal relationship between customer satisfaction and behavioral intentions. It incorporates the possible impacts of *Junzi*, the concept of noble man portrayed by Confucius as a role model, on customer postpurchase evaluation. Drawing on this philosophy-based perspective deeply rooted in the Chinese culture, it represents a novel view to understand and predict consumer behavior contingent on the perception of the virtuousness of a firm (i.e., *Junzi* corporation) (Snell et al., 2022).

This paper is organized as follows: an introduction is first given here with the research model and survey results in the second and third section. Finally, discussion is made on findings and implications are drawn.

2. Literature and Research Model

A classical model on customer satisfaction model was adopted from Oliver (1997) to examine any moderation effects from *Junzi* corporation on the casual links between behavioral intentions and product quality (H_{4a}), service quality (H_{4b}), and customer satisfaction (H_{4c}). It is hypothesized that these positive relationships will be greatly weakened if the firm is not seen much as a *Junzi* corporation. Other proven relationships such as the direct (H_{2a} & H_{2b}) and indirect effects (H_{1a} & H_{1b}) of product quality and service quality on behavioral intentions via customer satisfaction (H_3) are tested. Figure 1 depicts the research model of this study.

Figure 1. Research Model



3. Method and Results

To reach a wider population in China, an online survey was administered to inhabitants of municipalities and provinces to collect individual views on goods and services of a local retailer chosen by respondents. From all of the 422 valid responses, 11.61% were from Beijing, Chongqing, Shanghai, and Tianjin (i.e., all four municipalities of China) while province like Guangdong, Hubei, and Sichuan each contributed 20.85%, 8.06%, and 6.16% of respondents, respectively. In brief, 40% of respondents were males. The majority reported an educational level with no university degree and was in an age between 36 and 50.

Respondents were asked to rate product quality, service quality, customer satisfaction, and behavioral intentions using established scales on aspects such as durable, comfortable, reliable, assurance, repeat purchase, and recommendations. Furthermore, *ren*, *yi*, *li*, *zhi*, and *xin* were assessed to determine the virtuousness of individual retailers from the customer perspective. All measures were psychometrically sound. The Cronbach's alpha for the 3-item product quality and service quality scales was .731 and .838, respectively. The composite measure of *Junzi* corporation reported the highest alpha value among others (.911).

Data was thoroughly examined; no irregularities were found. Table 1 presented the mean, standard deviation and correlation of research variables under study. The arithmetic mean of customer satisfaction was 3.71, which was above the average score of behavioral intentions (3.67) and *Junzi* corporation (3.52).

Table 1. Descriptive Statistics

	Mean[1]	*SD*	**PQ**	**SQ**	**CS**	**BI**	**JC**
PQ	3.67	.699					
SQ	3.77	.761	.536**				
CS	3.71	.684	.495**	.587**			
BI	3.67	.825	.477**	.575**	.729**		
JC	3.52	.782	.533**	.590**	.720**	.680**	

[1] *1 = strongly disagree, 5 = strongly agree*
SD = Standard Deviation, PQ = Product Quality, SQ = Service Quality, CS = Customer Satisfaction, BI = Behavioral Intentions, JC = Junzi Corporation

***p ≤ .01*

The main test was performed by a stepwise hierarchical procedure of multiple regressions to examine the mediation and moderation effects as per the recommendations from Baron and Kenny (1986). Firstly,

product quality and service quality were regressed on customer satisfaction. Results supported H_{1a} and H_{1b}. Secondly, product quality, service quality, customer satisfaction and *Junzi* corporation were entered as a predictor of behavioral intentions. Results clearly showed that the indirect effect of product quality on behavioral intentions was fully absorbed by customer satisfaction while H_{2b} and H_3 were supported. Finally, *Junzi* corporation as a moderator was tested in the last equation. No moderating effect was noted between product quality and service quality on behavioral intentions. Contrary, the positive link between customer satisfaction between behavioral intentions was moderated by the perception of how customers see the firm as a *Junzi* corporation. H_{4c} was empirically supported (See Table 2).

Table 2. Standardized Regression Estimates

	Customer Satisfaction	***Behavioral Intentions***	***Behavioral Intentions***
		Standardized Beta	
Control Variables			
Gender[1]	-.033	.043	.037
Age[2]	-.010	.034	.027
Education[3]	.020	.055	.060
Direct/Mediating Effects			
Product Quality (PQ)	.257***	.042	.067
Service Quality (SQ)	.451***	.134**	.143**
Customer Satisfaction (CS)		.437***	.391***
Junzi Corporation (JC)		.260***	.256***
Moderating Effects			
PQ x JC			.070
SQ x JC			.041
CS x JC			-.132**
F-value	53.615***	90.114**	64.844***
R-square	.392	.604	.612
Δ in R^2	-	-	.008*

[1]1 = Male, 2 = Female, [2]1 = 18 – 25, 2 = 26 – 35, 3 = 36 – 50, 4 = 50 or above, [3]1 = Lower secondary or below, 2 = Upper secondary, 3 = College (non-degree), 4 = College (degree), 5 = Postgraduate

**p ≤ .05, **p ≤ .01, ***p ≤ .001*

To further examine the moderating effect from *Junzi* corporation underlying the mechanism between customer satisfaction and behavioral intentions, a K-means cluster procedure was adopted to separate respondents into two clusters using *Junzi* corporation as a criterion. Hence, Cluster 1 represented a group of lower score on *Junzi* corporation (2.82) while Cluster 2 was a group of higher *Junzi* score (4.09). As shown in Table 3, results of t-test supported that Cluster 2 consistently rated higher than Cluster 1 on all variables including customer satisfaction and behavioral intentions.

Table 3. K-Means Cluster and t-Test Results

	Cluster 1	Cluster 2	t-statistics
Product Quality (PQ)	3.33	3.94	9.810***
Service Quality (SQ)	3.38	4.08	10.502***
Customer Satisfaction (CS)	3.27	4.07	14.642***
Behavioral Intentions (BI)	3.13	4.10	14.813***

n = 422, (Cluster 1 = 189; Cluster 2 = 233)

****p ≤ .001*

4. Discussion

This study calls for the attention of researchers and managers on the importance of *Junzi* to evaluate the marketing performance of a firm. Although *Junzi* is a human-based concept centering on an individual's moral character, it unconsciously influences the judgement of Chinese towards business goals, strategies, and practices of a firm. The perception of how a firm is seen as a *Junzi* corporation to seek profit morally unquestionably intervenes the behavioral intentions of satisfied customers to repurchase or recommend the firm to friends and families. Results of this study clearly showed that a moderator pertaining to the philosophy of Chinese on virtue ethics governs the mechanism underlying customer satisfaction and behavioral intentions (Kwong et al., 2015; Tian et al, 2020). It specifies the condition that is constructive to translate the positive effect of customer satisfaction to intentions in full.

As Chinese customers tend to behave favorably in the future not only because they are satisfied with the product and service quality of a firm, but they also find the firm virtuousness. Hence, managers need to put in adequate efforts to incorporate *ren*, *yi*, *li*, *zhi*, and *xin* these virtues to their strategy and actively communicate to customers. These virtues prompt for the commitment of the firm to remain considerate and humanity all the time during the course of seeking profit in business. A firm to remain morally right is important to retain customer loyalty and it can be achieved by being a *Junzi* corporation (Snell et al., 2022; Tian et al., 2022).

To conclude, this study urged to further integrate the concept of *Junzi* corporation to consumer and marketing research. It offered additional support that the perception of the firm virtuousness moderates the casual link between customer satisfaction and behavioral intentions on top of *ren*, *yi*, and *li* in driving customer loyalty (Kwong et al., 2015). The next step of research can be a study on the employee side to

understand how the meaning of *Junzi* corporation is to frontline and service workers in performing their task. The connections between managers, customers and employees under this human-based concept of *Junzi* are worth to further investigate in China and Asia.

5. References

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