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Impact of Innovation Culture, Organization Size and Technological Capability on the Performance of SMEs: The Case of China

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Received: 11 January 2020; Accepted: 9 February 2020; Published: 12 February 2020



Abstract: Small and medium-sized enterprises (SMEs) in both the manufacturing and service sectors have been viewed as an important driving force behind the rapid economic growth in China. There are multiple factors that drive the success of SMEs. In this paper, we study the effect of innovation culture, technological capability, and organization size on the performance of SMEs in China. We hypothesize that firm performance is positively affected by each of these factors. We use data from 1124 SMEs in China and apply regression analysis to test our hypotheses. We find that technological capability and organization size have a statistically positive effect on the performance of SMEs. Because manufacturing and service industries have distinct characteristics, we also compare the effects of these factors on firm performance within these industries. We find that technological capability is positively and statistically significantly related to firm performance in the manufacturing industry but not in the service industry, while innovation culture is positively and statistically significantly related to firm performance in the service industry but not in the manufacturing industry.

Keywords: Innovation culture; organization size; technological capability; firm performance; SMEs; China

1. Introduction

Small and medium-sized enterprises (SMEs) in the manufacturing and service industries are playing an increasingly important role in the economic development of many countries around the world, particularly China, in which there has been a recent surge in the number of SMEs. According to the National Bureau of Statistics of China (NBSC), the number of SMEs in China grew from 15 million in 2013 to almost 20 million in 2015. As a result, SMEs now generate more than 60% of China's GDP and account for more than 90% of the total number of companies [1]. SMEs are also the most common target for foreign investment in China [2,3] and have contributed significantly to the increase in China's foreign reserves through exports. Though large companies account for the majority of China's exports, SMEs have a crucial indirect role as suppliers of components to large exporters. In particular, since joining the World Trade Organization (WTO), China has earned foreign exchange reserves mainly through its SMEs [2,4]. They also generate direct foreign exchange, with many SMEs in China specifically targeting foreign markets, as illustrated by the globally ubiquitous "Made in China" label. In this respect, Chinese companies have been able to successfully compete in the global market due to their lower labor and material costs for the same quality of product.

Although there has been significant recent growth in the number of SMEs, a number of challenges have also arisen. For example, the average life expectancy of an SME in China is estimated to be only

about 2.5 years [5], with a large number of underperforming SMEs failing within their first year. In comparison, according to a report by the United States Small Business Administration (SBA), 63% of SMEs failed over a period of six years in the USA [6]. Therefore, it is important to understand and identify the factors driving the performance and failure of Chinese SMEs.

One of the factors responsible for SME failure is the high volatility of global economic conditions. For example, due to the global financial crisis and the trade protections established by some countries and trading blocs, many international markets have shrunk, which has adversely affected China's ability to export [7]. As a result, many SMEs have had to either declare bankruptcy or were forced to switch their target from the foreign to the domestic market. Consequently, competition within the domestic market has increased, and many of the SMEs that have failed to adapt face financial difficulties. A number of SMEs have had to lay off workers due to a reduction in production, which, in turn, has adversely affected the consumer market. Furthermore, due to a downturn in the real estate market, uncertainty within the domestic market has also increased. Because almost all SMEs are part of an industrial supply chain, any disturbance to this supply chain will have adverse effects on these companies [8]. Therefore, in order to survive, SMEs need to establish their own niche without relying too heavily on the industrial supply chain or on international markets.

In terms of factors driving their success, SMEs have the advantages of greater flexibility and a greater ability to innovate compared to large companies. In fact, most SMEs are able to enter the market and find a foothold because of their innovative ideas and their ability to act quickly [9]. Their new ideas force established large companies to further develop their technology in order to compete. In addition to this innovation, a company needs the technological capability to offer their product or services in a competitive manner [10]. Another factor appears to be the size of the company. While very large firms tend to be less flexible, they may be able to secure more resources, whereas very small companies may lack the necessary funds to succeed [9]. Furthermore, firms that engage in innovation face certain impediments that other firms do not, which discourages innovation [11].

Because innovation, technological capability, and organization size appear to be related to the success of SMEs, the primary objective of our research is to empirically test the effect of these three factors on SME performance. In addition, because the manufacturing and service industries have distinct characteristics, we also hypothesize that there may be differences in the effect of these factors on firm performance in these industries, particularly in terms of innovative culture.

Using a sample of 1124 SMEs from the National Equities Exchange and Quotations (NEEQ) in China, we empirically test the hypothesized relationships between organization size, innovation culture, technological capability, and firm performance using hierarchical regression analysis. Our research contributes to the innovation and technology literature in a number of ways. First, the importance of innovation culture in SMEs is explored by investigating the relationship between innovation culture and firm performance. Second, our study also contributes to the literature by demonstrating the impact of technological capability on firm performance. Third, the difference in these relationships between the manufacturing and service industries are also examined. Finally, our study also provides significant theoretical and managerial implications.

The rest of this paper is organized as follows. Section 2 presents an overview of the relevant literature, along with the proposed hypotheses. Section 3 presents the research methodology. Section 4 estimates the proposed effects and summarizes the results. Section 5 explores the theoretical and practical implications of this research and discusses various issues facing SMEs in Asian countries. Conclusions, limitations, and suggestions for future research are provided in Section 6.

2. Literature Review

2.1. Sustainable Development of SMEs

Sustainable development has been defined as an approach that aims to achieve continuous growth [12–14]. Most studies indicate that the main driving force behind sustainable development

of SMEs is company specific parameters, such as organization size [15], innovation capacity [16], and technological capability [14]. For example, some studies have found that organization size impacts SME growth [17,18], while innovation has increasingly become an integral component of successful companies around the world. For example, Schumpeter et al. [19] identified innovation as a critical factor for economic development. Innovation not only involves the development of a new technology or a product but also includes innovation in organization design, product design, marketing, processes, and resource allocation. In fact, any tactic that allows an organization to better compete in the market can be considered innovation [20–24]. In addition to being a characteristic of successful companies, innovation is also important to successful countries. For example, Beaver [25] proposed that innovation is vital to the economic development and industrial competitiveness of a country. Bakar and Ahmad [26] also state that the ability to innovate is critical to a company that wants to gain a competitive advantage. A number of studies have also found that technological capability positively affects firm performance [27–29]. Based on this past research, the present study develops a research framework that examines the relationship between organization size, innovation culture, and technological capability.

2.2. Firm Performance

Firm performance is an important construct in operations management and is typically used as a dependent variable. It can be measured using various metrics, depending on the nature of a company, including return on assets (ROA) [30], average annual occupancy rate, net profit after tax, and return on investment (ROI) [31]. Other common measures used in the literature are profitability, productivity growth, stakeholder satisfaction, market share, and competition. There is also a close relationship between corporate performance and stock compensation [32]. In our study, we use return on sales (ROS) as a measure of firm performance. ROS has been used by some researchers in the past [33,34].

2.3. Organization Size

Many researchers have attempted to determine whether the size of a company affects its profitability. Some believe that firm size is an important determinant of firm performance [35] because large companies have the necessary resources to invest in technological development and thus improve firm performance [36]. Blau and Schoenherr [37] reported that organization size acts as a moderating variable between innovation and the performance of a firm. Meijaard et al. [38] studied the effect of organization size on organization structure. Acs and Audretsch [39] concluded that innovation in SMEs is hampered by the lack of funds, the lack of opportunities to recruit professional workers, and small innovation portfolios that do not allow the spread of risk. Empirical evidence suggests that organization size is a key driver of innovation leading to successful SME performance. Recently, Yusof et al. [40] reported the influence of firm size on SMEs' financial performance. Based on this past research, we propose the following hypothesis:

Hypothesis 1 (H1). *There is a positive relationship between organization size and the performance of SMEs.*

2.4. Technological Capability

The idea of technological capability was first proposed by the classical economists Schumpeter, Becker, and Knudsen [19]. This capability may include patented technologies, difficult-to-acquire skills, and accumulated institutional knowledge. According to Bettis and Hitt [41] and Henderson and Clark [42], technological capability that cannot be easily replicated is the foundation of a firm's competitive advantage. Through this capability, the firm is able to deliver products to its customers through its manufacturing and production processes. The key is whether the enterprise can effectively manage these processes and obtain sufficient financial returns. A number of studies have found that technological capability is positively related to firm performance [43–45]. In particular, Haseeb

et al. [46] argued that technology adoption is an effective strategy to enhance sustainable business performance among SMEs. Moreover, Liao et al. [47] investigated the contribution of technological capability to firm performance by investigating 238 Chinese high-tech firms. Based on this previous research, we propose the following hypothesis:

Hypothesis 2 (H2). *There is a positive relationship between technological capability and the performance of SMEs.*

2.5. Innovation Culture

Brettel and Cleven [48] define innovation culture as “the degree to which organizations are predisposed to learn continuously and to develop knowledge with the intention to detect and fill gaps between what the market desires and what the firm currently offers.” If it is not supportive of innovation, corporate culture can prove to be an impediment to its implementation [49]. SMEs tend to have a flexible corporate culture that encourages innovation. In particular, they are typically characterized by relatively low resistance to change, low risk aversion, and tolerance to ambiguity [50,51]. Similarly, Damanpour [52] found that the cultural innovation of large companies has a significant positive impact on performance. Bandera et al. [53] compared the cultural norms of France and the United States and found that corporate culture plays an important role in the growth of companies. In addition, several studies have investigated the impact of innovation culture on firm performance [48,54–56]. Based on these studies, we put forward the following hypothesis:

Hypothesis 3 (H3). *There is a positive relationship between innovation culture and the performance of SMEs.*

2.6. Innovation in the Manufacturing and Service Industries

Over the last few decades, industrialized nations have experienced a fundamental shift from a manufacturing to a service-based economy. Therefore, the question of whether innovation affects the service industry to the same extent as the manufacturing sector is important. Atuahene-Gima [57] presented the results of a study comparing the innovation activities of service firms and manufacturing firms in Australia. It was found that both the service and manufacturing firms focused on improving innovation. However, the relative importance of these factors depended on the type of company. Furthermore, product innovation is more likely to occur in the manufacturing industry, while service companies mainly focus on service innovation. Overall, we believe that innovation culture has a distinct influence on firm performance when comparing the manufacturing and service industries. We thus present the following hypothesis:

Hypothesis 4 (H4). *The impact of innovation culture on the performance of SMEs differs between the manufacturing and service industries.*

3. Research Methods

To test the first three hypotheses, we use a sample of firms from NEEQ, which is an SME bond market in China. Our sample is composed of manufacturing and service firms that had an IPO in the SME bond market between 2006 and 2014. After data pre-processing, 1124 SMEs (701 manufacturing and 423 service firms) are used for further analysis. In this data pre-processing stage, we delete firms that had transformed into large companies so that our sample only included SMEs. In addition, companies that were missing data are excluded, and all variables used in this study are winsorized at 1% and 99% to reduce potential bias [58]. The Made in China 2025 blueprint was also introduced in May 2015. Because we believe this policy may have promoted the sustainable development of Chinese SMEs, data for the dependent and independent variables are collected for the 2015 financial year.

3.1. Dependent Variable

Although there are many measurements for firm performance, in the present study, we use ROS as our dependent variable. ROS is measured by dividing the operating profit by total sales and is expressed as a percentage. The use of ROS allows interfirm differences in operating profit margins that derive from differences in innovation strategies within the sample to be captured. Furthermore, the ROS of SMEs is an important metric for sustainable development and corporate survival. Therefore, we collect ROS data for 2015 from the Choice database.

3.2. Independent Variables

Organization size: We measure organization size as the natural logarithm of total assets, as suggested by Flammer [59]. As discussed in previous research, organization size as a firm-specific variable has an impact on firm performance [60]. The total assets of each firm in 2015 are collected from the Choice database.

Innovation culture: In our study, we code innovation culture as a count variable. We employ text analysis of the annual reports for each SME and count the number of times the term “innovation” appears. For example, if an annual report mentions the term “innovation” once, we assign it a value of 1; if it is mentioned twice, we assign it a value of 2, and so on. The reason for using this approach is that we believe mentioning the term “innovation” in an annual report reflects a company’s commitment to innovation, because a company uses its annual reports as a way to attract investors and shareholders using the term “innovation” would facilitate this.

Technological capability: Technological capability is measured by dividing the number of technological employees by the total number of employees. Employee status can be found in the Choice database; we thus collect the number of technological employees and total employees for 2015.

Individual countries define SMEs differently depending on their stage of economic development. Table 1 compares the definitions for SMEs in China and Korea. Although the definitions differ, the contribution of SMEs to the GDP is quite similar. Table 1 helps the measurement of SMEs to be understood and provides a reference for other countries. Compared with other countries of the world, China’s large population base and vast geographical area have led to notable differences in the characteristics of Chinese SMEs, particularly in terms of their rapid development and high numbers over the last 20 years.

Table 1. Definition of small to medium-sized enterprises (SMEs) in China and Korea (taken 18 June 2011, from the Ministry of Industry and Information Technology, the National Bureau of Statistics, the National Development and Reform Commission, and the Ministry of Finance).

	China	Korea
Manufacturing	Employing fewer than 1000 people or an operating income below 400 million yuan	Employing fewer than 300 people or share capital less than 80 billion won
Services	Employing 300 or fewer people or an operating income below 100 million yuan	Employing fewer than 300 people or an operating income less than 30 billion won
Wholesale	Employing 200 or fewer people or an operating income below 400 million yuan	Employing 200 or fewer people or an operating income less than 20 billion won
Retail trade	Employing 300 or fewer people or an operating income below 200 million yuan	Employing 200 or fewer people or an operating income less than 20 billion won

4. Empirical Study

4.1. Main Results

The correlation matrix of the variables used in this study is presented in Table 2. We observe that both organization size and innovation culture have a significant positive correlation with firm performance. To test for collinearity, we perform a multicollinearity test using variance inflation factors (VIFs). We find that the VIFs were below 10.0, suggesting that multicollinearity is not an issue, allowing further analysis to be performed.

Table 2. Correlation analysis.

	Firm Performance	Organization Size	Innovation Culture	Technological Capability
Firm performance	1			
Organization size	0.135 **	1		
Innovation culture	0.075 **	0.014	1	
Technological capability	0.045	−0.201 **	0.083 **	1

** Correlation is significant at $p < 0.05$ (2-tailed).

Three separate sets of multi-stage hierarchical regression analyses are employed to estimate the effects of the key explanatory variables for the dependent variable. The first set of regression models covers all 1124 firms in both the manufacturing and service industries. The results of this first set of regression models are summarized in Table 3.

Table 3. Regression analysis.

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Std B		
1	(Constant)	−13.396 ***	4.032		−3.32	0.001
	Organizational size	3.884 ***	0.851	1.121	4.56	0.000
2	(Constant)	−14.648 ***	4.054		−3.61	0.000
	Organization size	3.853 ***	0.849	0.885	15.38	0.000
	Innovation culture	0.065 **	0.026	0.053	2.48	0.013
3	(Constant)	−19.094 ***	4.478		−4.26	0.000
	Organization size	4.260 ***	0.866	0.780	4.92	0.000
	Innovation culture	0.060 **	0.026	0.051	2.27	0.023
	Technological capability	9.074 **	3.914	1.928	2.32	0.021

Dependent variable: Firm performance. * $p < 0.1$, ** $p < 0.05$, and *** $p < 0.01$.

To test hypothesis H1, organization size is entered in the first step. In the second step, innovation culture is included to test hypothesis H2. Technological capability is entered in the third step to test hypothesis H3. Finally, in order to compare the difference between the service and manufacturing industries, we conduct a regression analysis for service companies and manufacturing companies separately.

The results of the regression analysis in Table 3 show support for Hypotheses 1–3. In all three regression models, the relationship between organization size and SME performance is positive and significant (regression coefficient 3.85–4.26, $p < 0.01$). The third regression model reveals that the relationship between technological capability and SME performance is also positive and significant ($\beta = 9.074$, $p < 0.05$), and the relationship between innovation culture and SME performance is positive and significant in Models 2 and 3 (regression coefficient 0.060–0.065, $p < 0.05$).

To test Hypothesis 4, we employ separate regression analyses for the manufacturing and service industries. Tables 4 and 5 summarize the descriptive statistics for the firms from these industries. For

the manufacturing firms in the sample, the average ROS is 5.18%, the average organization size is 4.80, the average innovation culture is 20.04 and the average technological capability is 0.20. For the service firms, the average ROS is 4.63%, the average organization size is 4.33, the average innovation culture is 23.96, and the average technological capability is 0.45.

Table 4. Descriptive statistics for manufacturing industry companies.

	Mean	Std. Deviation	N
Firm performance	5.18	20.22	701
Organization size	4.80	0.95	701
Innovation culture	20.04	31.07	701
Technological capability	0.20	0.13	701

Table 5. Descriptive statistics for service industry companies.

	Mean	Std. Deviation	N
Firm performance	4.63	35.08	423
Organization size	4.33	1.03	423
Innovation culture	23.96	35.12	423
Technological capability	0.45	0.25	423

The second set of regression models includes manufacturing firms only, and the results are shown in Table 6. The third set includes service firms only, and the results are presented in Table 7. We find that organization size is significantly positively related to firm performance in both the manufacturing ($\beta = 2.093, p < 0.01$) and service industries ($\beta = 6.360, p < 0.01$). For manufacturing firms, technological capability is positively and significantly related to firm performance ($\beta = 9.960, p < 0.1$); however, there is a non-significant relationship between innovation culture and firm performance ($\beta = 0.025, p > 0.1$). For service firms, innovation culture is positively and significant related to firm performance ($\beta = 0.087, p < 0.1$), but the relationship between technological capability and firm performance is marginally non-significant ($\beta = 10.657, p = 0.110$). Thus, the results support Hypothesis 4 in that the impact of innovation culture and technological capability on firm performance differs for the manufacturing and service industries.

Table 6. Regression analysis models on manufacturing industry.

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Std B		
1	(Constant)	−4.160	3.928		−1.06	0.290
	Organizational size	1.943 **	0.802	1.110	2.42	0.016
2	(Constant)	−4.728	3.957		−1.19	0.233
	Organization size	1.942 **	0.802	1.010	2.42	0.046
	Innovation culture	0.029	0.025	0.025	1.17	0.242
3	(Constant)	−7.402 *	4.222		−1.75	0.080
	Organization size	2.093 ***	0.805	0.763	2.60	0.009
	Innovation culture	0.025	0.025	0.021	1.02	0.306
	Technological capability	9.960 *	5.545	6.530	1.80	0.073

Dependent variable: Firm performance. * $p < 0.1$, ** $p < 0.05$, and *** $p < 0.01$.

Table 7. Regression analysis models on service industry.

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Std B		
1	(Constant)	−22.642 ***	7.221		−3.14	0.002
	Organizational size	6.292 ***	1.620	1.352	3.88	0.000
2	(Constant)	−23.948 ***	7.231		−3.31	0.001
	Organization size	6.089 ***	1.618	0.944	3.76	0.000
	Innovation culture	0.091 *	0.048	0.076	1.91	0.057
3	(Constant)	−29.776 ***	8.082		−3.68	0.000
	Organization size	6.360 ***	1.624	0.978	3.92	0.000
	Innovation culture	0.087 *	0.048	0.076	1.82	0.070
	Technological capability	10.657	6.651	−0.370	1.60	0.110

Dependent variable: Firm performance. * $p < 0.1$, ** $p < 0.05$, and *** $p < 0.01$.

4.2. Robustness Check

We also employ ROA instead of ROS as another indicator to re-investigate the hypotheses. As shown in Tables 8–10, the empirical results generally remain unchanged, which indicates that our conclusions are robust.

Table 8. Robustness check for the regression analysis.

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Std B		
1	(Constant)	3.611 **	1.705		2.12	0.034
	Organizational size	0.609 *	0.360	1.135	1.69	0.091
2	(Constant)	3.078 *	1.714		−3.61	0.073
	Organization size	0.596 *	0.359	1.219	15.38	0.097
	Innovation culture	0.276 **	0.111	0.030	2.48	0.013
3	(Constant)	0.658	1.890		0.35	0.728
	Organization size	0.818 **	0.365	0.938	2.24	0.025
	Innovation culture	0.025 **	0.011	0.024	2.23	0.026
	Technological capability	4.937 ***	1.651	5.183	2.99	0.003

Dependent variable: ROA. * $p < 0.1$, ** $p < 0.05$, and *** $p < 0.01$.

Table 9. Robustness check for the regression analysis models for the manufacturing industry.

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Std B		
1	(Constant)	6.417 ***	1.593		4.03	0.000
	Organizational size	−0.100	0.326	1.191	−0.31	0.760
2	(Constant)	6.336 ***	1.617		3.92	0.000
	Organization size	−0.099	0.327	1.142	−0.30	0.762
	Innovation culture	0.004	0.015	0.014	0.30	0.767
3	(Constant)	5.314 ***	1.715		3.10	0.002
	Organization size	−0.044	0.327	0.912	−0.13	0.894
	Innovation culture	0.002	0.015	0.008	0.14	0.892
	Technological capability	5.314 ***	1.715	6.384	3.10	0.002

Dependent variable: ROA. * $p < 0.1$, ** $p < 0.05$, and *** $p < 0.01$.

Table 10. Robustness check for the regression analysis models for the service industry.

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Std B		
1	(Constant)	0.001	2.740		0.00	1.000
	Organizational size	1.751 ***	0.617	1.751	2.84	0.005
2	(Constant)	−0.658 ***	2.737		2.63	0.009
	Organization size	1.618 ***	0.616	1.476	2.63	0.009
	Innovation culture	0.058 **	0.024	0.057	2.45	0.014
3	(Constant)	−3.066	3.02		−1.01	0.311
	Organization size	1.733 ***	0.618	1.167	2.81	0.005
	Innovation culture	0.055 **	0.023	0.054	2.35	0.019
	Technological capability	4.414 *	3.025	3.370	1.85	0.065

Dependent variable: ROA. * $p < 0.1$, ** $p < 0.05$, and *** $p < 0.01$.

5. Summary and Discussion

This study investigates the relationship between organization size, innovation culture, and firm performance. Hierarchical regression analysis is used to examine data from a sample of 1124 firms from NEEQ in China. We analyze the relationship between firm performance and (1) organization size, (2) technological capability and, (3) innovation culture. We also examine differences in the role of innovation culture between the manufacturing and service industries. Our study has some important implications for theory and practice regarding SMEs in Asian countries, which we discuss next.

5.1. Theoretical Implications

This research contributes to the literature in several ways. First, our study examines the relationship between organization size and firm performance based on a dataset of Chinese manufacturing SMEs. Our results contribute to the existing literature by proposing that organization size is positively related to firm performance. This outcome is consistent with the results of Yusof, Tabassi and Esa [40], who reported that organization size plays an important role in sustainable performance management.

In addition, our results contribute to the existing literature on technology management by proposing that technological capability is positively related to firm performance in the manufacturing industry, which is consistent with the findings of Tsai [44] and Su, Peng, Shen and Xiao [45]. This study also expands the discussion by Liao, Liu and Fu [47], and our study indicates that manufacturing SMEs in Asian countries should invest in upgrading their technological capability in order to enhance their performance.

Finally, this study also finds a positive relationship between innovation culture and firm performance in the service industry, suggesting that service firms should focus on creating a culture of innovation to enhance firm performance. This finding also expands the understanding of innovation in the manufacturing and service industries by providing evidence that innovation culture affects firm performance differently between the two types of industries.

5.2. Practical Implications

This study provides empirical evidence for the relationship between organization size, innovation culture, technological capability, and firm performance for practitioners, suggesting that SMEs should strive to improve their technological capability. This study would also help business practitioners understand the role of innovation culture in the manufacturing and service industries. Finally, our findings provide useful information for SMEs that are looking to develop their innovation and technology. Technology is the primary driving force for SMEs in the manufacturing industry in China, whereas innovation is an important factor for firm performance among service SMEs.

5.3. Challenges Facing SMEs in China

The implementation of low-level production technologies has been instrumental in the rapid development of SMEs in China. However, the quality of equipment and the technological innovation in SMEs is relatively low. There are a number of obstacles facing firms looking to pursue technological innovation, which has become a critical bottleneck for the further development of SMEs. A major reason for the poor innovation of SMEs in China is that there is a serious shortage of funding due to poor financing channels in terms of both private and government funding. In addition, there is a lack of technical know-how, equipment, and personnel.

5.4. Financing Issues

Due to the stagnant traditional financing systems, access to funds for SMEs remains difficult. Though there was rapid growth in global foreign direct investment (FDI) in 2015, it slowed in 2016. The 2017 World Investment Report released by the United Nations Conference on Trade and Development stated that, in 2016, worldwide FDI decreased by 2% to 1.75 trillion dollars. Recently, financing for SMEs in China has primarily involved foreign investment and international joint ventures. According to a news release for foreign investment, from January to April 2016 there were 8298 newly approved companies with foreign investment, up 6.5% from the previous year. However, the cost of production for Chinese companies is rising, with greater labor shortages and higher wages. At the same time, other countries such as India and Vietnam have lowered their labor costs and improved their business environment. These factors have led to a decline in China's attractiveness for foreign investment.

5.5. Management Issues

According to a survey in 2006 by the China Academy of Social Sciences, another reason for the low innovation of SMEs is the lack of management experience and knowledge of scientific management methods. According to this survey, about 70% of family-owned businesses fail to survive to the next generation, and 88% fail to reach the third generation. Only 3% of the family businesses are still running after the fourth generation and beyond. In contrast to other countries, family-owned enterprises in China remain far behind in terms of size, benefits, and survival rates. Statistics show that China welcomes 15 million new SMEs every year, but at the same time, nearly 10,000 SMEs leave the market every year. It has been estimated that 60% of SMEs go bankrupt within 5 years, and 85% of SMEs die out within 10 years. Their average life expectancy is only 2.9 years. The majority of these companies are essentially family businesses with no professional management skills. Family businesses tend to have an ad hoc management style, with a lack of standardization. Professional management styles place emphasis on human resource practices such as incentives for employees and on control and financial mechanisms, which are often overlooked by family-run businesses.

5.6. Company Expansion

Organizations, both large and small, grow and diversify through strategic acquisitions. Recently, these acquisitions have become more international in nature. Indeed, internationalization has been playing an increasingly active role among SMEs in the international market. Currently, many SMEs in China are eager to expand their scale of production and operation through acquisitions and diversification. However, many of these acquisitions happen blindly without adequate analysis in the pursuit of expansion, leading to financial difficulties.

5.7. The 2025 China Manufacturing Plan

In 2015, China released the 10-year 2025 China Manufacturing Plan to support the reform and innovation of the manufacturing industry through policies and financing. The plan dictates that, by 2025, there will be a substantial increase in the overall quality of the manufacturing industry, a significant

improvement in innovative capabilities, and the integration of industrialization and information technology. The plan also stipulates that the energy consumption, material consumption, and pollutant emissions of key industries should reach the levels of advanced economies, that a few multinational companies with strong international competitiveness should be established, and that industrial clusters should be developed to enhance the division of labor and generate efficient value chains.

More attention will be given to the development of emerging industries, such as semiconductors, internet and electronic information technology, new materials, biotechnology and pharmaceutical products, aircraft engines, and large steam turbines. The Chinese government will provide 40 billion yuan in funding to support the development of these industries. We believe that the government policy and financial support will promote firm innovation ability, which is also an important factor in innovation.

6. Conclusions, Limitations, and Future Research

This paper assessed the impact of innovation culture, organization size, and technological capability on firm performance among SMEs in China. We found that all three variables had a significant positive impact on the performance of SMEs. For manufacturing SMEs, our results indicate that technological capability has a positive impact on firm performance. However, for service SMEs, innovation culture contributes positively to firm performance. These findings are valuable for policymakers in that it is clear that investing in technological capability is a key factor in the success of modern entrepreneurial activity.

Our research has some limitations. First, we only looked at SMEs which had IPOs within the SME bond market, whereas a large number of SMEs in China are not listed. However, we believe our sample size was large enough for our results to be reliable. Secondly, measuring innovation culture is difficult. We collected data from companies' annual reports. This involved some subjective judgment, thus there may have been some inherent bias. Third, a cross-sectional design was employed in this study. Future research should focus on panel data collection and analysis.

This research can be extended in many ways. Future researchers can look at whether the government's policy on enterprise innovation affects the development of enterprises. In some of the earlier studies on innovation, government-related factors were neglected. In the 1970s, this situation changed, and some scholars believed that science and technology innovation required a high degree of control and planning from the government. The effect of industry-specific innovation and other factors that impact innovation can also be studied. Finally, CEOs, who are capable of promoting culture and technology can also influence firm performance, thus CEO characteristics should be investigated in the future.

Author Contributions: Conceptualization, G.T. and K.P.; methodology, K.P. and F.L.; supervision, K.P.; formal analysis, G.T.; data curation, G.T.; Validation, F.L.; writing—original draft preparation, G.T. and K.P.; writing—review and editing, G.T., A.A., F.L., and K.P. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Acknowledgments: We would like to thank the editor and the anonymous reviewers for their valuable comments and suggestions.

Conflicts of Interest: The authors declare no conflicts of interest.

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