THE EFFECTS OF EXTERNAL AND INTERNAL FACTORS ON FIRM PERFORMANCE OF HIGH-TECHNOLOGY SMES IN CHINA

by

YI CAO

Submitted in accordance with the requirements for the degree of

Doctor of Philosophy

Royal Holloway University of London

School of Management

July 2014

Declaration of Authorship

I YI CAO hereby declare that this thesis and the work presented in it is entirely my own. Where I have consulted the work of others, this is always clearly stated.

Signed: _____

Date: _____

ABSTRACT

This thesis examines the effects of factors external and internal to the firm, on Chinese high-technology small- and medium-sized enterprises (SMEs) firm performance. Specifically, this study explicates how and in what manner managerial networking, returnee entrepreneur, market orientation, and entrepreneurial orientation exert influence on high-technology SMEs firm performance in China. Using concepts derived from previous literature, this study develops the hypotheses to test the applicability of some existing theories in the case of high-technology SMEs in China's emerging economy context.

Based on questionnaire data, the analysis of 260 Chinese SMEs in high-technology industry suggests that managerial networks such as political networking and business networking are positively related to new product performance. This study further demonstrates that the link between managerial networks and new product performance is moderated by perceived industry growth. Specifically, the study finds that the positive relationship between political networking and high-technology SMEs new product performance is stronger when perceived industry growth is faster. Findings also show that the positive relationship between business networking and high-technology SMEs new product performance is weaker when perceived industry growth is faster.

This study examines the determinants of internationalisation of high-technology SMEs and the performance implications of such behaviours in China. The expected relationship between the presence of returnee entrepreneur and export performance is not found. Rather, findings show that the presence of returnee entrepreneur has a stronger, positive relationship with high-technology SMEs export performance when technological turbulence is high than when it is low. The study also finds that the previous entrepreneurs' MNEs work experience, inward internationalisation orientation

and international networks are positively associated with expert performance of high-technology SMEs. Further, findings suggest that institutional support in China is more than background conditions, but is an active agent which is positively related to export performance.

Although this study finds the presence of returnee entrepreneur is not related to high-technology SMEs export performance, we cannot completely rule out its potential influence. This study finds that a returnee entrepreneur is positively associated with firm performance of high-technology SMEs. Further, our findings suggest that executives tend to boost firm performance by implementing market orientation and establishing political connections. In addition, the results show that political connection is a moderator affecting the effects of returnee entrepreneur and market orientation on firm performance. It moderates them in such a way that for managers with higher level of political connections there is an even stronger impact of returnee entrepreneur or market orientation on high-technology SMEs firm performance.

This study explores the relationship between entrepreneurial orientation and firm performance of high-technology SMEs in China. Our findings confirm that entrepreneurial orientation is positively related to firm performance. Further, this study finds that ties with service intermediaries and institutional support are positively associated with firm performance of high-technology SMEs in China. In addition, our results show that ties with service intermediaries positively affect the performance implication of entrepreneurial orientation. We also find that the positive relationship between entrepreneurial orientation and high-technology SMEs firm performance will be weaker when the level of institutional support is higher.

ACKNOWLEDGEMENT

TABLE OF CONTENTS

Chapter 1

Introduction to the Study

Chapter 2

Literature Review

Chapter 3

Research Methodology

Chapter 4

The Role of Managers' Political and Business Networking in High-Technology SMEs New Product Performance: Evidence from China's Emerging Economy

Chapter 5

The Export Performance of High-Technology SMEs in Emerging Markets: The Effects of Firm Resources and Institutional Support

Chapter 6

The Role of Returnee Entrepreneur, Market Orientation and Political Connection in Firm Performance: Evidence from High-Technology SMEs in an Emerging Economy

Chapter 7

Entrepreneurial Orientation, Ties with Service Intermediaries, Institutional Support and Firm Performance: Evidence from High-Technology SMEs in an Emerging Market

Chapter 8

Summary and Conclusion

Appendices

Refernces

List of Figures

List of Tables

LIST OF ABBREVIATIONS

12

Terminology	*Abbreviation*
Confirmatory Factor Analysis	CFA
Industry-based View	IBV
Institutional Theory	IT
Return on Assets	ROA
Return on Investment	ROI
Return on Sales	ROS
Resource-based View	RBV
Small and Medium-Sized Enterprises	SMEs
Variance Inflation Factors	VIFs

Chapter 1

Introduction to the Study

1.1 Introduction

Over the past few decades the landscape of competition in the global economy has been dramatically changed. The rapid technological revolution and increasing globalisation present major challenges to firms' ability to maintain their competitive advantages, thereby driving more and more firms to reconsider how to attain success in the 21st century (Hitt, Keats and DeMarie, 1998). The new competitive landscape requires that firms use the latest technology, continue to develop new product and technology, actively engage in international markets, structure themselves to gain advantage in these markets, develop and maintain strategic flexibility, as well as build a long-term strategic vision that allows entrepreneurs to balance short-term performance with long-term needs (Tan, 2005). In particular, both researchers and practitioners have paid considerable attention to how high-technology small and medium-sized enterprises (SMEs) survive and growth in the new competitive landscape (Oviatt and McDougall, 1994; Zahra, Ireland, and Hitt, 2000). The growth of high-technology SMEs has not only added more products and services to the market and stimulated market competition, but also offered more employment opportunities and made contribution to improvement of the people's living standards (Chen, 2006; Li and Miller, 2006; McDougall and Robinson, 1990). For example, according to China Statistics Bureau, Chinese SMEs not only account for about 99% of the total number of firms, but also contribute more than 60% of that nation's total gross industrial output, 50% of tax revenues, 70% of import and export trade, as well as 80% of urban employment (Chen, 2006; Gedajlovic et al., 2012; Zhu et al., 2012). With regard to innovation, SMEs have contributed 66% of patents nationwide, 74% of technological innovations, and 82% of

new products (Zhu et al., 2012). However, with the changed dynamics in this competitive landscape, high-technology SMEs arguably suffer from liabilities of newness and smallness relative to their larger established rivals (Lee et al., 2012). Therefore, developing high-technology SMEs has been viewed as both a revitalisation tool for developed economies and a driving force for emerging markets (Li and Atuahene-Gima, 2001; Zhao and Aram, 1995).

Previous literature has suggested that emerging economies are an increasing prominent position in the world economy (Wright, Filatotchev, Hoskisson and Peng, 2005). As Xu and Meyer (2013) contend, emerging markets provide a laboratory for investigating the interaction between firm strategies and local contexts. An emerging economy can be generally defined as a country that often has low-income but with a rapid pace of economic development, and government policies favouring economic liberalisation and a free market system (Hoskisson, Eden, Lau and Wright, 2000). In accordance with Hoskisson et al. (2000), emerging economies not only comprise developing countries in Latin America (e.g., Brazil), the Middle East, Southeast Asia (e.g., India) and Africa (e.g., South Africa), but also transition economies such as China, the former Soviet Union (e.g., Russia), and Central and Eastern Europe. In particular, since China implemented its open-door policy in 1978, China's transition economy is changing from the state-controlled centralist command economy that previously had followed the Soviet model of central planning based on the control of inputs and outputs to market-based socialist economies which place emphasis on entrepreneurial activities (Alistair et al., 2003; Tan, 2001). The sustained economic liberation, perceived as providing tremendous opportunities for many individuals and existing economic units, has given birth to a new diversity in organisational forms and to a plurality of property ownership types (Boisot and Child, 1988, 1996; Nee, 1992; Tan, 2001; Yang and Li, 2008). For instance, one characteristic of China's rapid economic change has been the relative

decline of large SOEs and the privatisation of some SOEs, converting property rights from state sectors into non-state sectors with various types of ownership (Anderson et al., 2003; Choi, Lee, and Williams, 2011; Zapalska and Edwards, 2001). Specifically, new types of business enterprises encompass privately owned enterprises (POEs), township and collective enterprises (TCEs), transformed state-owned enterprises (TSOEs), and international joint ventures (IJVs) (Dana, 1999; Yang and Li, 2008). Those new types of business enterprises have emerged as the important driving forces behind China's rapid economic development. Further, most industries in China have been undergoing structural transformation, which provide complex industrial dynamics that significantly affect firm behaviour and business conduct (Luo, 2003). Thus, Chinese emerging economy can be a rich research context to investigate how new entrepreneurial firms capitalise on growth.

As economic reform continuously transforms China's economy and society, a new class of small privately owned firms, particularly those that SMEs in high-technology industry, have been emerged, which are radically different from the state-owned enterprises (SOEs) and are characterised as being more entrepreneurial (Tan, 1996). Given China's rapid development and average annual GDP growth of approximately 10% over the last two decades, its SMEs are presented with deep and broad set of business opportunities related to technological development, market enhancement, and internationalisation (Li, 1998; Gedajlovic, Cao, and Zhang, 2012). As economic reforms proceeded, Chinese SMEs play an increasingly important role in stimulating economic growth, increasing employment, expanding exports and promoting science and technology innovations (Chen, 2006). For instance, according to a recent report from Chinese Association of Small and Medium Enterprises (CASME), it stated that China SMEs have shared 60% of GDP, 50% of taxation, 80% of employment and 66% of patents of the country by 2009. Upon recognising that the low profit margin and the

accumulated pollution due to heavily dependence on labour-intensive industries will impede national economic growth, the Chinese government is currently helping SMEs to enhance their technological capabilities with the aim of creating their own competitive advantages (Tang and Tang, 2012). High-technology SMEs are given an increasingly important role in this economic and industrial transformation to a knowledge-based, high value-added and high profit margin economy (Xiao, 2011).

Recognising the importance of new technology SMEs, China is striving to create substantial opportunities for entrepreneurial firms to switch to more innovative ventures and to capitalise on the increasing support provided by the government and its agencies (Tang and Tang, 2012). Chinese policy makers also have made efforts to encourage and enhance entrepreneurial activities in China, such as by initiating 'sparking programmes' and constructing 'high and new technology parks' in certain industries and regions (Yang and Li, 2008). Furthermore, the government-sponsored venture capital (VC) funds such as the National Electronic and Information Technology Development Fund that sponsored by the former Ministry of Information Industry makes equity investments in high-growth, technology-based SMEs in the information technology industry (Zhang et al., 2009). The Chinese government has also promulgated several new laws and measures recently to reward innovative activities and nurture long-term innovation among SMEs, including the Law of the People's Republic of China on Science and Technology Progress, the Law of the People's Republic of China on the Promotion of Small- and Medium-sized Enterprises (2002), and Government Procurement Law of the People's Republic of China (2002) (Gu et al., 2009; Liu, Simon, Sun, and Cao, 2011; Tang and Tang, 2012). In particular, in January 2006, the Chinese government adopted 'the National Medium- to Long-Term Plan for Science and Technology Plan (2006 - 2020)'. For the implementation of the plan, several policy measures were issued by government and grouped into the following areas: increased

budgetary appropriation at all levels of government and its agencies, tax incentives for enterprises innovation, public funding for supporting the absorption of imported technology, government technology procurement, a new strategy for creation and protection of intellectual property rights (IPRs) and technology standards, venture capital and funding mechanisms for new technology SMEs, and so on (Gu et al., 2009; Hutschenreiter and Zhang, 2007).

As important engines for economic development in Chinese emerging economies, high-technology SMEs are confronted with numerous business opportunities, but are simultaneously faced with developing institutions and a legacy of political interference in market activities and economic experimentation (Gedajlovic, Cao and Zhang, 2012; Li and Matlay, 2006). Compared to their counterparts in developed economies, high-technology SMEs have great difficulties in obtaining critical resources (for example, managerial resources and financial resources) from markets because strategic markets and infrastructure (for example, transportation and communication) in emerging markets are severely underdeveloped (Li and Atuahene-Gima, 2002; Li and Miller, 2006; Peng and Heath, 1996). Further, China's economy is still transitioning from government-led to more market-orientated economic regime and remains lacking in some supporting financial infrastructure pertaining to public and private equity markets (Peng and Zhou, 2005). For instance, it seems likely that the SMEs loan guarantee system in China is still underdeveloped and inadequate. As Zhu, Wittman and Peng (2012) posit, less than 10% of small and private firms can obtain bank loans and less than 1% is able to obtain other external financing from capital market. In addition, in the Chinese venture capitalist industry, funds seem to be typically associated with state-owned banks (Ahlstrom, Bruton, and Yeh, 2007; Zhang et al., 2013). As a result, it is difficult for SMEs to obtain venture capital directly from the internal capital market, as used extensively by entrepreneurs in most industrially developed economies (Hussain,

Millman and Matlay, 2006). Though the opportunity-rich environment gives high-technology SMEs an advantage to survive and growth in new competitive landscape, those SMEs are also subject to the constraining effects of under-developed institutional infrastructures (Gedajlovic, Cao, and Zhang, 2012). Therefore, high-technology SMEs in Chinese emerging economy context represent an excellent setting to investigate to what extent both internal and external factors affect new technology SMEs firm performance.

1.2 Domain of the Study

Drawing on previous literature (Hoskisson et al., 2000; McDougall-Covin, Jones, and Serapio, 2014; Wright et al., 2005; Xu and Meyer, 2013), there are three leading theoretical perspective which guide strategy and firm performance research on emerging markets, ranging from industrial organisation theory (the industry-based view), the resource-based view of the firm, and institutional theory (the institution-based view of strategy). Specifically, industry-based view places an emphasis on the importance of the industry conditions. Firms can achieve and sustain competitive advantage by identifying and neutralising all external environmental threats in the industry (Porter, 1980). Unlike industry-based view, the resource-based view of the firm is concerned with the influence of the firm's heterogeneous resources and capabilities in explicating why firms differ and how they achieve and sustain competitiveness, thereby generating superior economic return for firms (Barney 1991; Barney et al., 2001; Grant, 1991). One might expect resources such as market and industry expertise to be especially critical during early venture development when an entrepreneur is conceiving initial product or service offering (Sullivan and Ford, 2014). Furter, drawing on international entrepreneurship literature, the role of the individual such as entrepreneur itself and the impact of entrepreneurs' cognitive processes to make sense of the uncertain, novel, and complex situations encountered during internationalisation can be treated as unique

resources embedded in firms (McDougall-Covin, Jones, and Serapio, 2014). Nevertheless, both the industry- and resource-based views are criticised for largely ignoring the formal and informal institutional underpinning that offers the context of competition in industries and firms studied with these lenses (Peng et al., 2008, 2009). Since institutions are typically defined as 'the rules of the game' in a society (North, 1990; Scott, 1995), Peng (2003) claims that the formal and informal rules of the game significantly affect organisations in emerging economies, especially those moving from central planning to market competition. In other words, institution '*directly determines what arrows a firm has in its quiver as it struggles to formulate and implement strategy and to create competitive advantage*' (Ingram and Silverman, 2002:20). As already noted, it is not the primary purpose of this thesis to develop a new theory of firm strategy research, and rather to test the applicability of some existing theories in the context of high-technology SMEs in Chinese emerging market. Given this aim, it is important to consider the main literature with regard to the theoretical underpinnings of firm strategy and performance. It is largely the focus of Chapter 2, which reviews three streams of theoretical explanation for the factors determining firm performance of high-technology SMEs in the context of China's emerging economy.

The methodology of the study is set out in Chapter 3. It is essentially that this study is empirical in nature. The chapter endeavours to present the background of primary data collection by means of a questionnaire survey administered to senior managers in high-technology SMEs in China. Further, it reports the issues and considerations in the process of data collection, as well as provides the sample characteristics of the collected data.

Chapter 4 considers the effect of managerial networking (such as political networking and business networking) upon high-technology SMEs new product performance.

Specifically, this chapter seeks to answer the following questions: how are political networking and business networking related to high-technology SMEs new product performance in an emerging economy such as China? How does perceived industry growth moderate the link between managerial networking and high-technology SMEs new product performance?

Chapter 5 examines the determinants of internationalisation of high-technology SMEs and the performance implications of such behaviours by using an emerging market such as China. Drawing on previous literature, this chapter proposes that the entrepreneur's experience and skills play a significant role in small business internationalisation. Hypotheses are developed to test the extent to which high-technology SMEs export performance can be predicted by entrepreneurs' previous working experience, inward internationalisation orientation, and international networks. Further, this chapter will examines whether and to what extent the role of mobile international talents as represented by returnee entrepreneurs contribute to export performance of high-technology SMEs in an emerging market. Given that firms are heterogeneous in their susceptibility to their environment context (Porter, 1985), this chapter also examines whether the presence of returnee entrepreneur will have a stronger positive relationship with high-technology SMEs export performance when technological turbulence is high than when it is low. Building on institution-based view proposed by Peng (2003), this chapter takes into account the direct and moderating effects of institutional support on high-technology SMEs export performance in the context of Chinese emerging market.

Chapter 6 builds on the propositions set out in Chapter 5 with regard to the effect of returnee entrepreneur, and investigates the extent to which returnee entrepreneur affects firm performance of high-technology SMEs in China's emerging market. Furthermore, this chapter examines how market orientation and political connection influence high-

technology SMEs firm performance. Despite the critical role of political connection in transitional business environment, it may remain unknown how political connections could shape the effectiveness of other managerial resources regarding returnee presence and market orientation on firm performance. In this Chapter, we will make an effort to address two research questions: how are the presence of returnee entrepreneur, market orientation and political connection related to high-technology SMEs firm performance in an emerging economy such as China? How do political connections and other managerial resources such as returnee entrepreneur presence and market orientation intertwine to affect firm performance?

Chapter 7 is firstly concerned with the examination of the direct effect of entrepreneurial orientation upon firm performance. Previous studies propose that the relationship between entrepreneurial orientation and firm performance might be indirect or curvilinear (Wang, 2008; Tang et al., 2008; Zhao et al., 2011). By contextualising our study in high-technology SMEs in China, this chapter will provide empirical evidence to suggest whether and in what manner entrepreneurial orientation affects firm performance. Secondly, this chapter investigates how ties with service intermediaries and institutional support influence high-technology SMEs firm performance. More importantly, given that the relationship between entrepreneurial orientation and firm performance is context specific as posited by previous literature, this chapter will examine whether and in what manner ties with service intermediaries and institutional support affect the performance implication of entrepreneurial orientation.

Chapter 8 provides the research summary and conclusion.

1.3 Summary

This chapter has provided the context of the study, identified some research gaps in previous literature, and outlined the chapters that follow. The next chapter provides a

review of leading theoretical perspectives on firm strategy and performance research building on three main streams of theories in this area. Other key areas of the literature relating to the firm strategy and performance in emerging markets examined in this study are reviewed in the remaining Chapters 4 through to 7.

Chapter 2

Literature Review

The aim of this chapter is to discuss relevant concepts and focal theories in literature, to improve the understanding of how and in what manner entrepreneurial firms such as high-technology SMEs from emerging markets and transition economies achieve and sustain their competitive advantages. The reviewed literature in this chapter assisted in informing the theoretical framework and methodology guiding this study. This chapter presents an overview, analysis and critique of the dominant theories which guide entrepreneurship and strategy research on emerging markets: the industry-based view (IBV), the resource-based view (RBV), and institutional theory (IT).

2.1 The Industry-based View (IBV)

A firm's ability to earn a rate of profit in excess of its cost of capital may depend upon two factors, including the attractiveness of industry in which the firm is located as well as its establishment of competitive advantage over rivals (Grant, 1991). The industry-based view (hereafter IBV), pioneered by Porter (1980), stresses the key principle of competitive strategy formulation is a firm's relationship to its industry environment in which it competes (Boter and Holmquist, 1996; Champerlain, 1933; Child, 1972; Conner, 1991; Gao et al., 2010; Venkatraman and Prescott, 1990). It is argued that because firm management can influence neither industry conditions nor its own performance, firms can only achieve superior performance by identifying and neutralising all external environmental threats in the industry (Caloghriou et al., 2004; Porter, 1980). Thus, firms develop and implement competitive strategies in an attempt to alter their position in the industry vis-à-vis rivals and suppliers (Gao et al., 2010).

Drawing on the 'structure-conduct-performance paradigm' of the industrial organisation view of the firm (Bain, 1956, 1959; Mason, 1949; Porter, 1980), the industry-based

view, posits that the industry structures (e.g., number of sellers and buyers, product differentiation, barriers to entry, degree of fixed vs. variable costs, vertical integration, and so on) determine the firm's strategy and conduct (i.e., pricing, advertising), which in turn affect firm performance (Collis, 1994; Conner, 1991; Porter, 1980, 1981; Scherer and Ross, 1990). The structure of an industry is comprised of five competitive forces: bargaining power of suppliers, bargaining power of buyers, threat of substitutes, potential entrants, and rivalry among industry incumbents (Porter, 1980). Hence, industry attractiveness, that is, the profitability of all the firms competing in the industry, will be a product of the influences of the five forces in an industry in which firms is located (Gartner, 1985; Porter, 1980). For example, suppliers to an industry may exert powerful influences upon an industry's attractiveness if the suppliers do not have to contend with other substitute products for sale to the industry (Gartner, 1985). It also should be noted that much attention in the industry-based view has been paid to the effects of firm size on performance. The reasoning seems to be that large-sized companies may control substantial proportions of industry output, and hence having the greatest opportunity and incentive to engage in a quest for monopoly rents (e.g., the returns to market power) (Conner, 1991; Grant, 1991). As Weiss (1975: 184) claims:

Monopoly power – the power to set price or exclude competition – is hardly precise, but it appears to require a persistent market share of well over half of some significant market, with no close challenger. The underlying assumption in this area is that such dominant firms will follow policies that misallocate resources (e.g., set prices well above cost) and redistribute incomes in favour of those in powerful positions.

Further, industry conditions such as the presence of barriers to entry is argued to the fundamental prerequisite for market power, which in turn play a critical role in determining and limiting a firm's strategic behaviour (Baumol, Panzer, and Willig,

1982; Teece et al., 1997; Porter, 1980). For example, economies of scale can serve as an entry barrier when the output level at which all potential economies of scale have been leveraged (minimum of efficient scale) is large relative to the total size of the market and when the average costs associated with a production level below the minimum of efficient scale are greater than the average costs at minimum efficient scale (Wei et al., 2014). It seems that firms can only make profits if they are able to obstruct the competitive forces in product markets) which may drive their economic return to zero (Mazzucato, 2002). Industry concentration might lead to superior performance, but unless there are considerable barriers to entry, high profits will attract new potential entrants and thus the ability to collude will decline (Caloghriou et al., 2004). In addition, high-growth markets (e.g., high marketing costs, rising productivity, increased investments and high levels of buyer spending) may provide a dynamic market place with ample opportunities for firms to obtain better performance (Caloghriou et al., 2004).

2.1.1 Limitation of IBV

Though the industry-based view (IBV) emphasises industry attractiveness as the primary basis for superior profitability, most studies indicate that differences in profitability within industries appear to be much more significant than differences between industries (Schmalensee, 1985; Grant, 1991). According to Barney (1991), implicit in IBV is the assumption that firm resources are homogeneous and perfectly mobile, so that the only difference is associated with the characteristics of industries in which firms operate, and industry-based attributes are the only sources of competitiveness for firms. Further, Rumelt (1991) posits that firm level effects explained variance in the firm's performance rather than industry level. Caloghirou et al. (2004) in their research of SMEs identified that firm-specific factors have 2.5-3

times the influence on firm performance than industry structures. Specifically, they found that the effects of firm-specific factors encompassing firm and managerial processes (e.g., coordination, learning, and transformation) and the firm-level assets (e.g., marketing, production, technology and financial) on firm profitability is more significant than that of the industry structure in terms of concentration, product differentiation and industry growth.

2.1.2 IBV and Emerging Economies

The industry-based view (IBV) contends that the external industry environment in which a firm operates may exert pressure to which a firm must adapt in order to survive and prosper, and industry conditions play a crucial role in affecting a firm's strategic behaviour (Collis, 1994; Porter, 1980). Based on this rationale, it is argued that firms attain superior performance by seeking favourable industry environments, locating attractive segments and strategic groups within industries, and moderating competitive pressures by affecting industry structure and rivals' behaviour (Grant, 1991). How and in what manner industrial conditions exert influence upon firms' strategies and performance in emerging economies? Previous studies in this direction have been rather limited until recently. China, like other emerging economies, has been undergoing radical structural transformation, leading to considerable inter-industry variations such as government control and degree of openness to foreign investment (Luo and Tan, 1997). The transformation has created a hybrid industrial structure that might reflect the idiosyncrasies of both traditional central planning systems and mature market economies with respect to the degree of market imperfection, structural uncertainty and government interference (Perkins, 1994; Wang et al., 2012).

It also should be noted that the transition toward a market economy has created one of the most competitive markets in the world (Gao et al., 2010). As Wang et al (2012)

postulate, the gradual erosion of government-imposed entry barriers leads to an environment of hyper competition that was previously unseen in some industries. For example, the rise of collective enterprises (e.g., township and village enterprises) and privately owned enterprises brings new forces to the economy, and foreign-invested firms or multinational enterprises may exert high competitive pressures for local companies (Buckley, Clegg and Wang, 2002). As the Chinese domestic market becomes saturated and more competitive, firms, especially that new technology ventures, are compelled to formulate their entrepreneurial strategies by considering industrial conditions. For example, because the competitive pressure pushes firms to cut prices and lower profit in the domestic market, Chinese companies may use outward FDI as a means to search for new markets and seek further growth (Wei et al., 2014). In addition, industry dynamics such as competitive pressure, industrial growth, structural uncertainty, and industrial regulation are likely to influence an executive's desire and effort in establishing and exploiting managerial networking with external entities (Luo, 2003). Further, industries also differ considerably in terms of technological opportunities, defined as the set of possibilities for technological advance (Wang, et al., 2012). To succeed in those industries for which technological innovation is the key source of competitive advantage, building innovation strategies is no longer a matter of choice, but of necessity (Lu, Liu and Wong, 2011). As Porter (1981) argued, industry-based view can offer much to the analysis of strategic choices by firms within the industries, and the contribution is growing.

2.2 The Resource-Based View (RBV)

Following Penrose (1959), researchers have commenced recognising the importance of resources for the firm's competitive advantage and performance, suggested a firm as a collection of resources it owns or controls (Wernerfelt, 1984; Barney, 1991; Grant, 1991;

Mahoney and Pandian, 1992; Peteraf, 1993). Unlike traditional industrial organisation economics, which relies heavily on the analysis of the competitive environment, the resource-based view (RBV) emphasises the analysis of various resources possessed by the firm (Das and Teng, 2000). In particular, the resource-based view (RBV) is concerned with the influence of firm-specific resources in explaining why firms in the industry vary systematically in performance over time (Barney, 1991; Barney et al., 2001; Teece et al., 1997; Wernerfelt, 1984). As Das and Teng (2000) argue, because many resources are firm-specific and not perfectly mobile or imitable, firms are continuously heterogeneous with respect to their resource base. Sustained firm resource heterogeneity, hence, becomes a possible source of competitive advantage, which then leads to economic rents, or above-normal returns (Das and Teng, 2000). It persuasively argues that the resource-based perspective offers such a view that a firm's competitive advantage derives primarily from the internal factors of firms, thus complementing the traditional emphasis of of strategy on industry structure and strategic positioning within the industry (Barney, 1991; Eisenhardt and Martin, 2000; Porter, 1980; Wernerfelt, 1984). The main literature that indicates the relationship between firm resources and sustained competitive advanges is reviewed below.

As Grant (1991) posits, the resurgence of interest in the role of the firm's resources as the foundation for firm strategy may reflect dissatisfaction with the static, equilibrium framework of industrial organisation economics. As reported in literature, Porter's (1980, 1985) analysis of industry structure and competitive market positioning tends to propose that a firm's ability to earn a profit depends upon two prescriptions. First, a firm is advised to seek attractive industries in which it is located, and find a perfect match between its internal characteristics (e.g., strengths and weaknesses) and its external environment such as opportunities and threats, the so-called SWOT (strengths, weaknesses, opportunities, and threats) analysis (Das and Teng, 2000; Porter, 1980). It

appears that if a firm can locate in such an industry or strategic group, the firm is able to leverage its strengths and avoid its weakness, as well as exploit opportunities and neutralise threats, which in turn benefits above-normal returns compared with other competitors in the industry. Nevertheless, it is argued that the endeavour to search for a favourable industry environment and associated market power cannot succeed if the company in question lacks the necessary resources (Grant, 1991; Glaister, 1996). In the absence of necessary firm-specific resources, the firm seems to be unlikely to leverage its strengths and exploit environmental opportunities.

Second, in Porter's model (1980, 1985), competitive positioning is proposed to rest on the adoption of a generic strategy, indicating either cost leadership or differentiation advantage (serving a broad or narrow scope of the market) may equip the firm with profit-generating abilities (Glaister, 1996). Nevertheless, it is argued that the choice of generic strategy is fundamentally driven by the resource position of the firm (Grant, 1991). For instance, as illustrated in previous literature such as Grant (1991), the ability to establish a cost leadership may require possession of low cost sources of inputs, superior technology, sufficiently large plant capacity to reap the benefits of scale economies, and/or access to low-wage labour. Similarly, the pursuance of differentiation strategy requires possession of brand reputation, proprietary product technology or marketing, distribution and servicing networks.

Central to the understanding of the resource-based view of the firm (hereafter RBV) are the definitions of resource, competitive advantage, and sustained competitive advantage (Lockett et al., 2009; Wright, McMahan and McWilliams, 1994). As prior studies claimed, a firm's resources can be seen as a source of competitive advantage. Following Barney (1991:102), a firm is said to have a competitive advantage when it is implementing a value creating strategy not simultaneously being implemented by any

current or potential rivals. It should be noted that whether or not a competitive advantange is sustained depends on the possibility of competitive duplication (Barney, 1991). According to Barney (1991), the definition of sustained competitive advantage does not rely on the length of calendar time during which a firm enjoys a competitive advantage, nor does it imply the sustained competitive advantage will exist forever. Hence, a competitive advantage is sustained only if if continues to exist after efforts to emulate that advantage have ceased (Lippman and Rumelt, 1982).

In accordance with Wernerfelt (1984:172), a resource is defined as '*anything which could be thought of as a strength or weakness of a given firm…whose tangible assets which are tied semi-permanently to the firm*'. Barney postulates that firm resources encompass '*all assets, capabilities, organisational processes, firm attributes, information, knowledge, etc. controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness*' (1991:101). According to Barney (1991), firm resources can be classified into three categories: physical capital resources, human capital resources, and organisational capital resources. *Physical capital resources* include such things as the physical technology used in a firm, a firm's plant and equipment, its geographic location, and its access to raw materias. *Human capital resources* encompass such things as the experience, judgement and intelligence of the individual executives and employees in the firm. *Organisational capital resources* are comprised mainly of the firm's structure, planning, controlling and co-ordinating systems, as well as the informal relations among groups within the firm and other firms in its environment (Wright, McMahan and McWilliams, 1994)

While Barney (1991) claims firm-specific resources can be a source of competitive advantage of a firm, Grant (1991) notes that it is necessary to distinguish between firm resources and capabilities. Arguably, firm-specific resources serve as building blocks

upon which firm capabilities are based, and firm capabilities are the organisational routines through which sustained competitive advantage of the firm might be achieved (Collis, 1994). In accordance with Newbert (2007: 136), '*authors argue convincingly on theoretical grounds that resources, capabilities, and core competences under examination are valuable, rare, inimitable and/or non-substitutable, the empirical results seem to suggest that while capabilities and core competences do indeed contribute significantly to a firm's competitive advantage, resources do not.*' It was argued that simply possessing unique resources do not enable a firm to achieve competitive advantage (Priem and Butler, 2001). According to Makadok (2001), *capability* refers to a special type of resources, that is, specifically and organisationally embedded non-transferable firm-specific resource whose purpose is to improve the productivity of other resources possessed by the firm. In a broad sense, this capability which seems to be the main source of the firm's competitive advantage, actually conform to the requirements of resource proposed by Barney. Thus, in this study, capability can be seen as a special resource to help the firm create the competitive advantage.

As discussed earlier, the environmental models of competitive advantage (Porter, 1980, 1985) focused on the impact of industry conditions upon the firm's performance, and attempted to identify favourable industrial attributes which may provide firms greater opportunities and fewer threats. The Porter's environmental framework of firm strategy tends to suggest that firm resources are homogeneous and perfectly mobile, so that industry attributes could be the only source of competitive advantages. However, Barney (1991) posits that the resource-based view of the firm is based on two different assumptions: (1) that firms within an industry (or strategic group) might be heterogeneous with regard to the strategic resources they control; (2) that those resources might not be perfectly mobile across firms, and thus heterogeneity can be

sustained. Specifically, according to Wright, McMahan, and McWilliams (1994), firm *resource heterogeneity* refers to the fact that resources differ across firms. In contrast, in the environmentally focused strategy model, firm resources are viewed as homogenous across firms in an industry (Rumelt, 1991). Firm *resource immobility* refers to the inability of competing firms to obtain resources from other firms or resource markets (Wright et al., 1994). In the environmentally focused strategy model, resources are considered mobile in that companies can purchase or produce resources held by competing firms (Wright et al., 1994). Thus, competitive advantage can occur only in situations of firm resource heterogeneity and firm resource immobility, and these assumptions serve to differentiate the resource-based model from the traditional strategic management model (Barney, 1991; Wright et al., 1994).

Further, it should be noted that not all resources have equal strategic importance or the potential to be a source of sustainable competitive advantage for the firm (Barney, 1991; Beleska-Spasova et al., 2012). As a result, Barney (1991:105) argues that firms achieve competitive advantage by possessing and controlling resources that must have four attributes: (a) they must be valuable, in the sense that it exploits opportunities and/or neutralises threats in environment in which a firm is located, (b) they must be unique or rare among a firm's current and potential competitiors, (c) they must be imperfectly imitable, and (d) they cannot be substituted with another resource by competing companies. These attributes of firm resources can be considered as empirical indicators of how heterogeneous and immobile a firm's resources are and thus how useful these resources are for generating sustained competitive advantages (Barney, 1991).

In particular, Barney (1991) argues that valuable and rare resources can only be sources of sustained competitive advantage if firms that do not possess these resources cannot

secure them. Firm resources can be imperfectly imitable for one or several of the following reasons.

Firstly, a firm's ability to obtain a resource is contingent upon the unique historical conditions (Barney, 1991). The RBV tends to posit that not only are firms intrinsically historical and social entities, but that their ability to obtain and leverage some resources depends on their place in time and space. For example, it could be important for a firm to obtain unique experience, but the recognition that the effect of such unique history upon the firm performance is more crucial. Moreover, a firm with a unique and valuable organisational culture that emerged in the early stages of a company's history may have an imperfectly imitable advantage over firms founded in another historical period, where various organisational values and beliefs come to dominate (Barney, 1991; Zucker, 1977). If a firm possesses valuable and rare resources as a result of its unique path through history, it will be able to exploit such value-creating strategies that cannot be duplicated by other firms, for firms without that particular path through history cannot acquire the resources necessary to implement the strategy (Barney, 1991).

Secondly, the link between the resources possessed by a firm and the firm's sustained competitive advantage is argued to be causally ambiguous (Barney, 1991). Causal ambiguity exists when the link between the resources controlled by a firm and a firm's sustained competitive advantage is not understood or understood only very imperfectly (Barney, 1991:108). As Lippman and Rumelt (1982) argued, both the firms that possess resources that create a competitive advantage and the firms that do not obtain these resources but seek to duplicate them could be faced with the same level of causal ambiguity. If firms that possess these resources have a better understanding of their influence on competitive advantage than firms without these resources, then firms without these resources can engage in hiring away well placed knowledgeable managers

in a firm with a competitive advantage or undertaking a careful systematic study of the other firm's success (Barney, 1991). Nevertheless, if factors and mechanisms that are sources of sustainable competitive advantage are not understood, the presence of causal ambiguity creates the difficulty that undermines the possibility of successful imitation, because the competing companies have no idea about what to imitate (Barney, 1991).

Thirdly, the resource generating a firm's competitive advantage is socially complex (Barney, 1991). Firm resources that are socially complex may embrace a firm's culture, interpersonal relations among managers and a firm's reputation among suppliers and customers (Glaister, 1996). Although these resources are not necessarily characterised by causal ambiguity, they are imperfectly imitable as long as they cannot be created even with systematic efforts by competing firms.

To sum up, the resource-based view of firm strategy proposes that the firm can achieve a sustained competitive advantage by obtaining and exploiting the firm's heterogeneous and non-tradable resources. These firm-specific resources not only provide the basic direction for a firm's strategy, but also serve as the primary source of competitive advantage, thereby generating superior economic return for firms (Grant, 1991). In this regard, the resource-based view (RBV) has proven to be a sound theoretical base for developing and testing the effects of internal factors upon the firm-level performance differences.

2.2.1 Limitation of RBV

Although the resource-based view (RBV) is an influential framework for explicating firm performance, it has been criticised for the RBV is a static theory for a firm's development in dynamic markets. The basic assumptions of RBV on which competitive advantage is sustained cannot thrive in dynamic markets where short-term unpredictable advantages are the norm (Brown and Eisenhardt, 1998). For example, in highly dynamic

markets, where products and services change at short intervals, static resources alone cannot help sustain competitive advantage (Galunic and Rodan, 1998).

Although there is a significant body of research on RBV, researchers have criticised it as conceptually vague and tautological (Porter, 1991; Williamson, 1991; Mosakowski and McKelvey, 1997; Eisenhardt and Martin, 2000; Priem and Butler, 2001; Bromiley and Fleming, 2002). According to Mosakowski and McKelvey (1997: 66):

'the current state of the strategic management work on the resource-based view represents tautological reasoning of the sort that (1) rents are often used to define a firm's critical resources in that these resources are identified by comparing successful versus unsuccessful firms; and then (2) the question is asked whether these critical resources generate rents, to which a resounding YES is heard. They argue that a valid empirical measure of firm capabilities must be independent of whether or not it produces economic rent.'

As Porter (1994: 445) argued, '*at its worst, the resource-based view is circular. Successful firms are successful because they have unique resources. They should nurture these resources to be successful. But what is a unique resource? What makes it valuable?*' Furthermore, Priem and Butler (2001) posit that the elemental strategy concept of 'value' which has been acknowledged to be a critical factor for entrepreneurial success remains outside the resource-based view. The resource-based view (RBV), therefore, does not adequately explain how and why certain firms are competitive in situations of rapid and unpredictable change (Eisenhardt and Martin, 2000; Foss and Robertson, 2000; Priem and Butler, 2001; Sallinen, 2001).

Further, the resource-based view (RBV) has been criticised for it lacks of considering context (Priem and Butler, 2001). Resources are based in a context and depending on characteristics of that context, so a focus on resources could create strategic inflexibility

and core rigidities for a firm that would generate negative returns (Leonard-Barton, 1992). Thus, firms have to manage the social context of their resources and capabilities so as to create rents (Hoskisson, Eden, Lau and Wright, 2000). For example, with their study, Miller and Shamsie (1996) took a step toward founding that the changing Hollywood film industry provided a context that creates different strategic resources along the time. Their research tends to suggest that resource values can be identified when considering the resource and its context simultaneously.

2.2.2 RBV and Emerging Economies

The resource-based view of the firm (RBV) suggests that sustained competitive advantage derives from the resources a firm controls that are valuable, rare, imperfectly imitable, and not substitutable (Barney et al., 2001). However, firms in emerging economies may encounter resource scarcities and obsolescence where resources that were valuable under a former institutional regime become less valuable under more market orientated institutions (Wright, Filatotchev, Hoskisson, and Peng, 2005). Accordingly, firms might need to manage the daunting circumstances in emerging economies to create and nurture their unique resources and capabilities, and thereby attaining sustainable competitive advantage. So what resources and capabilities stand out in shaping firms, especially those small entrepreneurial ventures, strategies and performance in the social context of emerging economies? Research in this direction is very limited and extant research tends to apply the concepts from the developed markets in the emerging market context (Li and Miller, 2006). As Hosksson, Eden, Lau and Wright (2000) maintain, firms in emerging economies tend to employ unique organisational arrangements, encompassing diversified business group (conglomerates) and relationship-based capabilities. However, as emerging economies move forward more market oriented institutions, business group may need to restructure so as to access the resources and capabilities necessary to succeed in a more developed market

environment (Wright et al., 2005). In addition, firms in emerging economies may develop capabilities for relationship-based management in their environment that substitute for the lack of institutional infrastructure (Hosksson et al., 2000).

From a strategic point of view, it can be argued that innovation focus is crucial for technology-focused ventures (e.g., high-technology SMEs) in emerging markets. As Li (2001) proposed, product innovation may contribute to firm performance in an emerging market by exploiting aggressively the growth opportunities and gaining competitive advantage in order to buffer environmental threats to their survival and growth. Further, in a highly competitive environment, a firm's ability to keep up with the pace of innovation and maintain ongoing innovation efforts is critical to its survival and growth (Guan, Yam, Tang and Lau, 2009). With a sample of technological start-up in Korea, Lee, Lee and Pennings (2001) investigate the role of internal capabilities on firm performance, suggesting that technological capabilities during the development period are important predictors of business performance. Further, Li and Atuahene-Gima (2001) found that product innovation strategy can contribute to firm performance by using data from new technology ventures in China. In addition, with a sample of technological start-ups in Russia, Bruton and Rubanik (2002) demonstrated that technological innovativeness can contribute to the growth of new venture. However, as SMEs possess fewer resources than their larger counterparts, they face greater barriers to developing their own competitive advantage through internal sources of innovation (Deng, Hofman and Newman, 2013). Thus, their ability to innovate does not simply rely upon their internal capabilities, but increasingly depends on their ability to leverage knowledge externally from their business networks (Kogut and Zander, 1992).

2.3 Institutional Theory (IT)

Both the industry- and resource-based view are criticized for largely ignoring the formal and informal institutional underpinning that offers the context of competition in industries and firms studied with these lenses (Peng et al., 2008, 2009). Drawing on previous studies such as institutional economics in the tradition of North (1990) and the sociology-based institutional theory (DiMaggio and Powell, 1991; Meyer and Rowan, 1977), the institution-based view of strategy has evolved as the most popular line of theorising as they bring context into the analysis of firm level phenomena (Peng, 2003; Xu and Meyer, 2013).

It is understandable to treat institution as background, because the industry- and resource-based views arise primarily out of research on competition in the advanced economies such as the United States, in which it may seem reasonable to assume a relatively stable, market-based institutional framework (Peng et al., 2008). However, researchers increasingly find that institutions in emerging economies are different from those in developed countries, which significantly shape the strategy and performance of firms (Hoskisson et al., 2000; Wright et al., 2005; Peng, 2003; Peng and Heath, 1996). Thus, in accordance with Peng (2003) and Peng et al (2008), institutions should be treated as independent variables rather than the background, and an institution-based view of strategy draws attention to the dynamic interaction between institutions and firms in emerging economies. In other words, institution '*directly determines what arrows a firm has in its quiver as it struggles to formulate and implement strategy and to create competitive advantage*' (Ingram and Silverman, 2002: 20).

Institutions significantly create legitimacy pressures for firms and directly affect firms' strategic choices and performance consequences (Peng, 2003). This view is built on the insight from new institutionalism in organisation theory (North, 1990; Scott, 1987,

1995; DiMaggio and Powell, 1983), which examines the role of societal influence and pressures for social conformity in formulating organisations' actions (Oliver, 1997). Under the label of 'new institutionalism', it should be noted that some differences exist between the economic version which emphasises more on efficiency (North, 1990), and the sociological version which concentrates more on legitimacy (DiMaggio and Powell, 1983; Scott, 1995).

According to North (1990: 3), institutions are defined as '*the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction*'. North's definition is based on the cognitive limitations of the individual and the consequent influences which both informal and formal institutions may have impacted on his or her motivation and actions (Dunning and Lundan, 2008). In particular, he stressed that organisations in society are the players bounded by those formal and informal rules. Formal constraints contain political rules, judicial decisions, and economic contracts. Informal constraints, on the other hand, encompass socially sanctioned norms of behaviour, which are embedded in culture and ideology (Scott, 1995). North (1990) posits that under circumstance where formal constraints fail, informal constraints will come into play to reduce uncertainty and provide constancy to organisations. An institutional system is complete only when both formal and informal institutions are taken into account (Dunning and Lundan, 2008). Thus, the role of institutions in an economy is to reduce both transaction and information costs through tempering uncertainty and establishing a stable structure that expedite the process of interaction (Hoskisson et al., 2000).

With regard to the sociology-based institutional perspective, this approach claims that institutions influence individuals, groups and organisations within it through the way it is structured and managed (Meyer and Rowan, 1977). It is argued that firms sharing the

same institutional environment will adopt similar practices, thereby becoming isomorphic with each other (DiMaggio and Powell, 1983; Kostova and Roth, 2002; Meyer and Rowan, 1977). Institutions are considered as cognitive, normative, and regulative structures and activities that provide stability and meaning to social behaviour (Scott, 1995). The core of this framework is that through these institutional coercive, mimetic and normative pressures, '*organisational characteristics are modified in the direction of increasing compatibility with environmental characteristics*' (DiMaggio and Powell, 1983:149). Specifically, institutional forces may urge organisations towards conformity, where isomorphism or similar resemblance of organisations exists owing to the common constraints they encounter (DiMaggio and Powell, 1983). Organisations that work within the practices and rules of the institution will attain legitimacy and ultimately survival (DiMaggio and Powell, 1983; Li and Miller, 2006). In other words, driven by legitimacy motives, firms conform to institutional pressures (DiMaggio and Powell, 1983; Kostova and Roth, 2002).

2.3.1 IT and Emerging Economies

Arguably, institutional theory is the most applicable paradigm for explicating enterprise behaviour in emerging economies because government and social influences may be stronger in emerging economies than in develop economies (Hoskisson et al., 2000). It is recognised that institutions play a critical role in shaping and supporting the effective functioning of market mechanisms, which help firms engage in market transactions (Meyer, Estrin, Bhaumik and Peng, 2009). In particular, both formal and informal institutions are argued to be directly shaping entrepreneurial ventures' strategic choices, thereby enhancing or impeding firm performance in emerging economies (Peng, 2003). As Gao et al. (2010) claim, the institution-based view of strategy places an emphasis on the interplay between institutions and organisations, and considers strategic choices as the outcomes of such interplay. For example, well-established institutions my facilitate

the development of the competitive capabilities of entrepreneurial firms that embed within the institutions, help reduce information asymmetries and serve to disseminate information about what and how to gain or deepen new and existing capabilities (Wei et al., 2014).

Instead of taking the institution for granted, as is often done in research in developed economies, institution-based view suggests that entrepreneurial firms encounter many challenges from unsupportive cultural attitudes, underdeveloped legal structures, governmental corruption, high taxation and lack of resources, resulting in restrictions in entrepreneurial firm strategy and action (Li and Miller, 2006). For example, Zhu et al. (2012) examined institution-based barriers to innovation in SMEs in China, which identify the five key barriers such as competition fairness, access to financing, laws and regulations, tax burden, and support systems.

Further, in emerging economies where legal systems are relatively weak and the private sectors is often stereotyped as exploitive, legitimacy of entrepreneurial ventures is threatened (Hitt et al., 2000). For example, Ahlstrom and Bruton (2002) noted that the laws and government policies toward private entrepreneurial ventures in China are subject to a broad and varied interpretation of a range of officials who enact and enforce them. Under such circumstance, Chinese private firms may formulate different strategies such as cooperating with large SOEs, or building connections with political officials in order to minimise the threat of interference in the form of excessive fees and sudden arbitrary regulatory changes (Ahlstrom and Bruton, 2002).

However, institutional forces may induce firms to create particular resources and capabilities and ensure transparency and contract enforcement (Wei et al., 2014). For example, the Chinese government provides strong incentives to enterprises that are in the process of investing abroad (Child and Rodrigues, 2005). With strong support from

the government, some Chinese firms have been rapidly modernising and many of them have grown to be competitive on a world scale, largely through aggressive internationalisation (Zeng and Williamson, 2003; Lu et al., 2011). With regard to SMEs in emerging economies such as China, SMEs influencing by the Chinese socialist market economy have to consider the views of the customers on the one hand, and respond to governmental influences on the other (Siu et al., 2006).

2.4 Conclusion

This review of some of the literature on the industry-based view, resource-based view, institution-based view has argued that a firm's competitive advantages depend on acquiring and deploying resource, external environment, and institutional context through dynamically interaction process of this strategy tripod. It also sheds light on the predictors in shaping technology-focused SMEs' entrepreneurial strategies and performance by proposing an integrated theoretical framework, and thereby contributing to extant literature in entrepreneurship and strategy in emerging economies.

Chapter 3

Research Methodology

This chapter sets out the research methodology used to collect the data for undertaking the empirical analysis. In conducting research, the most appropriated research methods should be taken into account before data collection (Saunders et al., 2002). For collecting survey data, previous studies have noted that different methodological approaches may embrace both advantages and disadvantages simultaneously (Churchill, 1987; Zikmund, 2003; Malhotra, 1996). As a result, the appropriateness of a data collection method depends mainly upon the overall research objectives, the research hypotheses and assumptions, as well as the characteristics of the population (Cragg, 1991).

3.1 Research Philosophy: Epistemology and Ontology

Research is rooted in certain philosophical perspectives. The term 'research philosophy' relates to the development of knowledge and the nature of that knowledge (Saunders, Lewis and Thornhill, 2007). It is important that a researcher considers the philosophy of the study, since ignoring it can affect the quality of the research and may even render it irrelevant (Neuman, 2000). Furthermore, it is useful to understand the philosophical positioning of a research, because it assists researchers to clarify alternative designs and methods for a particular research, and the method that would be appropriate for the type of study being conducted (Easterby-Smith et al., 1991). This chapter considers two major philosophical branches in social research: epistemology and ontology. Epistemology refers to how to know the reality. It concerns what constitutes acceptable knowledge in a field of study. The key epistemological question is whether the approach to the study of the social world, including that of management and business,

can be the same as the approach to studying the natural sciences (Saunders et al., 2007). Ontology is concerned with nature of knowledge and reality (Creswell, 1994; Saunders et al., 2007). In this discussion research philosophies such as positivism, interpretivism, objectivism and subjectivism will be discussed in detail. Different philosophical stances may influence the way in which researchers think about their research process.

3.1.1 Positivism

For a positivist, the social researcher must study social phenomena in the same state of mind as the physicist, chemist or physiologist when he probes into a still unexplored region of the scientific domain (May, 1998). Positivists believe that social reality is stable and can be observed as well as described from an objective viewpoint, without interfering with the phenomena being studied (Levin, 1988). It is frequently advocated that the positivists will be likely to adopt a highly structured methodology in order to facilitate replication (Gill and Johnson, 2002). Simply expressed, positivism is the position of school of thought that accepting and applying the principles and procedures of the natural sciences to studies of the social world (Bryman and Bell, 2007).

According to Hirschheim (1985: 33), positivism has a long and rich historical tradition. It is also embedded in our society that knowledge claims not grounded in positivist thought are simply dismissed as unscientific and therefore invalid. For the positivist, real knowledge is only knowledge based on observed facts (Comte, 1853). Moreover, the outcome of such research can be law-like generalisations in the nature of results yields in scientific research (Remenyi et al., 1998). It should be noted that positivism has had a particularly successful association with quantitative research. As Guba and Lincoln (1994) suggested, the quality of research is assessed in terms of its reliability, validity and rigour with which quantitative analysis is implemented. Thus, a quantitative research method is appropriate where quantifiable measures of variables of interest are

possible, where hypotheses can be formulated and tested, and inferences draw from samples to populations (Liebscher, 1998:669).

Positivism has been criticised in social research as pseudo-scientific, inflexible, myopic, mechanistic, outdated, and limited to the realm of testing existing theories at the expense of new theory development (Goulding, 2002). Anti-positivism argues that there are not universals outside our minds. Thus, anti-positivism pay attentions to the ways people make sense of the world especially through sharing their knowledge and experiences with others via the medium of language (Easterby-Smith et al., 2002).

3.1.2 Interpretivism

Interpretivism is an epistemology that advocates that it is necessary for the researcher to understand differences between humans in our role as social actors (Saunders et al., 2007). It holds the view that reality is socially constructed and can be understood through a subjective interpretation (Denzin and Lincoln, 2000). Knowledge of reality will be gained through social construction such as language, shared meanings, tools and documents (Walsham, 1993). There are no predefined dependent and independent variables in interpretative research; rather, the essence of interpretative research is to unravel the complexity of human sense-seeking as the situation emerges (Kaplan and Maxwell, 1994). For interpretivists, there are possibly many interpretations of reality, however, maintain that these interpretations are in themselves a part of the scientific knowledge they are pursuing to understand reality (Goulding, 2002). Particularly, some would argued that that an interpretivist perspective is highly appropriate in the case of business and management research, especially in such fields as organisational behaviour, marketing and human resource management (Saunders et al., 2007).

It also should be noted, on the other hand, that interpretivism has been criticised for lacking of generalizability and scientific rigor for conducting research (Denzin and

Lincoln, 2005). In addition, as interpretivism adopting an empathetic stance, the challenge here is to explain the social world of research in accordance with researcher's point of view (Saunders et al., 2007). Hence, there are possibly no ways of verifying the truth in interpretivists' statements (Denzin and Lincole, 2005).

Table 3.1 Features of Two Major Philosophies

Basis of Comparison	Interpretivist Philosophy	Positivist Philosophy
Basic beliefs	World socially constructed and subjective Observer part of what is observed Science driven by human interests	World external and objective Observer independent
Researchers focus	Emphasis on meanings Try to understand what is happening Look at totality of each situation Develop ideas through induction from data	Focus on facts Look for causality and fundamental laws Reduce phenomena to simplest elements Formulate hypotheses and then test them
Preferred methods	Uses multiple methods to establish different views of phenomena Small samples investigated in-depth or over time	Operationalising concepts so they can be measured Taking large samples

(Source: Easterby-Smith et al., 1991:2)

3.1.3 Objectivism

Objectivism portrays the position that social entities exist in reality external to social actors concerned with their existence (Saunders et al., 2007). Objectivism shares the same traditions with the natural science, that is, the prediction and explanation of the behaviour of phenomena and the pursuit of the detachment from the topic under investigation (May, 1997).

3.1.4 Subjectivism

The subjectivist holds the view that social phenomena are created from the perceptions and consequent actions of social actors. Furthermore, this is a continual process in that through the process of social interaction these social phenomena are in a constant state of revision (Saunders et al., 2007). As Remenyi et al. (1998) stressed, it should be necessary to study the details of the situation to understand the reality or perhaps a reality working behind them. This is often follows from the interpretivist stance that it is necessary to explore the subjective meanings motivating the actions of social actors in order for the researcher to be able to understand these actions (Saunders et al., 2007).

3.1.5 Rationale for Choice of Philosophical Approaches

There have been ongoing debates on positivist – interpretivist and objectivist – subjectivist philosophical stances. However, as Saunders et al. (2002, 2007) argued, researcher should not fall into the mistake of stating that one philosophical domain is 'better' than the other one. Each of them will be appropriate depending on the objectives of the research.

Based on the aims and objectives of this research, the most appropriate and applicable of options, and thus the ones adopted for this study, are that of positivism and objectivism. In particular, as it discussed early, the purpose of the positivism is to generate hypotheses that can be statistically tested and proved. Positivism also places particular emphasis on conducting research from an objective perspective that employs highly structured methodology with quantifiable observations involved in statistical analysis (Saunders et al., 2007). The ontological assumption of the present research is that organisational practices regarding firm-level innovation within Chinese high-technology small- and medium-sized enterprises (SMEs) and that the researcher will be able to map these out. In order to explain the relationship between these variables it will

be necessary to test hypotheses generated from previous studies and literatures, rather than to explore the concept and then devise a theory. As Creswell (2003) suggest, philosophical stances should be integrated with research strategy and research approaches.

3.2 Research Approach: Deduction (Quantitative Approach) and Induction (Qualitative Approach)

The majority of research conducted in the business management domain adopts either a deductive approach or an inductive approach. The difference between qualitative and quantitative research is that they have different ways of conducting social research. Insofar as it is useful to attach these research approaches to the different research philosophies, deduction owes more to positivism and induction to interpretivism (Saunders et al., 2007). However, such labelling potentially misleads people to fall into the trap of considering that one research approach is better than another. Essentially, choosing an appropriate research approach depends on the research questions that researcher is seeking to answer.

3.2.1 Induction (Qualitative Approach): building theory

It has been noted earlier that deductive approach has its origins in research in the natural sciences. Nevertheless, the emergence of the social sciences in the 20th century led social science researchers to be wary of deductive method. They were critical of an approach that enabled a cause-effect link to be generated between variables without an understanding of the way in which humans interpreted their social world (Saunders et al., 2007). Qualitative research aims to collect rich and in-depth data in the form of words rather than numbers. The objective sought is "*to describe, decode, translate and otherwise come to terms with the meaning, not the frequency, or certain more or less naturally occurring phenomena in the social world*" (Van Maanen, 1983:9).

Furthermore, followers of inductive position would criticise that deduction tends to construct a rigid approach that does not permit alternative explanations of what is going on (Saunders et al., 2007). Qualitative researchers use a range of interconnected interpretive practices with the hope of getting a better understanding of the phenomenon at hand (Denzin and Lincoln, 2005). In particular, research adopting an inductive approach is more appropriate to target the study of a small sample of subjects. Researchers in this tradition are more likely to use a variety of techniques such as interview to gather these data in order to establish different views of phenomena (Easterby-Smith et al., 2002). Given the small-scale of qualitative approach, it is unlikely to generalise the research results, but it could produce or advance new theories or propositions based on the deep understanding of the phenomenon. As Miles and Huberman (1994) posited, researchers adopt qualitative research to investigate social phenomena, gradually making sense of them by contrasting, comparing, replicating, cataloguing and classifying the data of the study.

Qualitative research is usually attached to the interpretive philosophy. According to Denzin and Lincoln (2005:3), "*Qualitative research is a situated activity that locates the observer in the world. It consists of a set of interpretive, material practices that make the world visible. These practices transform the world…Qualitative research involves the studies used and collection of a variety of empirical material-case study; personal experience; introspection; life story; interview; artefacts; cultural text and productions; observational, historical, interactional, and visual texts-that describe routine and problematic moments and meanings of individuals' lives*".

Crossley and Vulliamy (1997) claim that qualitative methodology 'provides descriptions and accounts of the process and social interactions in natural settings, usually based upon a combination of observation and interviewing of participants in

order to understand their perspective. Culture, meanings, and processes are emphases, rather than variables, outcomes, and products. Instead of testing pre-conceived hypotheses, much qualitative research aims to avoid the imposition of a precious and possibly inappropriate, frame of reference on the subjects of the research'.

However, qualitative research has often been designated as fiction and not science, because there are no ways of verifying the truth in its statements (Denzin and Lincoln, 2005). As positivists argued, qualitative study is perceived as unscientific, value laden, lacking rigour and validity, unable to be generated, and distorting canons of 'good' science (Denzin and Lincoln, 2000). Furthermore, qualitative research is termed as exploratory and assigned a lower rank on the epistemological ladder (Goulding, 2002). It mostly considers personal values, collaborates with participants, and interprets the data accordingly (Creswell, 2003). However, it is evident that qualitative study is mostly concerned with internal process and context rather than the result of a phenomenon. The main advantage of qualitative method is its flexibility in generating data, hence providing new insights about social and human activities.

3.2.2 Deduction (Quantitative Approach): testing theory

Deduction owes much to positivism and is usually associated with scientific research involving the development of a theory by means of testing. It is the prevailing research method in the natural sciences, where laws present the basis of explanation, allow the anticipation of phenomena, predict their occurrence and therefore permit them to be controlled (Collis and Hussey, 2003). As such, deductive research seeks to explain and predict what happens in the social world by searching for regularities and causal relationships between its constituent elements (Burrell and Morgan, 1979). It generally involves a process of developing theories based on explanation, anticipation, as well as forecasting phenomena in order to control those (Saunders et al., 2007). This process is

mostly achieved by generating hypotheses from previously relevant theories which are then empirically investigated through various research methods (Bryman and Bell, 2007). The purpose of these research methods is to accept or reject the hypotheses and their various implications. In addition, as Bryman and Bell (2007) claimed, researchers adopting deductive way should be able to properly link relevant theory from which their hypotheses are deduced with the aim of developing accurate research methods. Moreover, when using a deductive approach information is observed and quantified numerically employing statistical procedures (Creswell, 2003). Given the large-scale quantitative research in order to be statistically representative, it is, therefore, mostly characterised by its high generalisability and reliability in social research.

As Robson (2002) stated, the process of deductive research has a series of sequential phases as followed

- Deducing a hypothesis (or hypotheses) from the theory
- Expressing the hypothesis in operational terms (that is, indicating how the concepts or variables are to be measured)
- Testing this operational hypotheses (i.e. using statistical approaches)
- Examining the specific outcome of the inquiry
- Modifying or revising the theory based on the findings (if necessary)

It should be noted that an attempt is then made to verify the revised theory by going back to the first step and repeating the whole cycle (Saunders et al., 2007). In terms of the verification or falsification of the pre-stated hypotheses, it is likely that deductive research tends to collect data in the form of numbers through surveys with the aim of enabling statistical analysis. Survey method will be discussed later in detail.

As a result of their different approach, the major differences between the deductive approach and the inductive approach are summarised in below in Table 3.2.

Table 3.2 Major Differences between Deductive and Inductive Methods of Research

Deductive Approach	Inductive Approach
Emphasis on testing and verification	Emphasis on understanding
Focus on factors and reasons for social events as well as explaining causal relationships between variables	Focus on gaining a close understanding of the research context and the meanings humans attached to events from respondent's/informant's point of view
Researcher independence of what is being researched (Objective 'outsider view' distant from data)	Researcher is part of the research process (Subjective 'insider view' and closeness to data)
A highly structured approach (Logical and critical approach)	A more flexible structure to permit changes of research emphasis as the research progresses (Interpretation and rational approach)
Controlled measurements	Observations and measurements in natural settings
Hypothetical-deductive, emphasis on hypothesis testing	Explorative orientation
Result-oriented	Process-oriented
Particularistic and analytical	Holistic perspective
The necessity to select samples of sufficient size in order to generalise conclusions	Generalisation by comparison of properties and contexts of individual organism

(Source: Ghauri and Gronhaug, 2005; Saunders et al., 2007)

It must be noticed that both research approaches have their strengths and weaknesses, despite these criticisms of both methods. Some researchers hold the view that the two are not mutually exclusive and could very well support each other in most social science inquiry for generating valid and valuable knowledge (Kaplan and Duchon, 1988; Lin, 1998). Given the richness and complexity of the real world, the chosen research methodology should be one that best suits the problem under consideration and the objectives of that research (Hammersley and Atkinson, 1995). To investigate the relationship between various factors such as managerial networking, human mobility, strategic orientations, institutional environments and firm's innovation and business performance, the present research therefore relies on deductive (quantitative) approach.

The rationale for selecting the deductive approach was based on the following. Firstly, the quantitative approach suited the research phenomenon, and was relevant to the research aim of testing the causal relationships between different factors and firm's innovation and business performance in the context of high-technology SMEs in Chinese emerging economy. Although there are some qualitative studies in extant literature (e.g., Ahlstrom and Bruton, 2002; Siu, Lin, Fang and Liu, 2006; Siu and Bao, 2008; Zhao and Aram, 1995), it is worth to verifying an already developed framework by the application of statistical techniques. In accordance with the positivist philosophy, quantitative researchers embark on a journey of scientific verification, by which the hypotheses derived from exploratory studies will be verified or falsified.

Secondly, it should be acknowledged that previous literature lacks an empirically coherent theory of SMEs, especially those SMEs in emerging markets. Furthermore, the present research intends to collect objective data and generalise the patterns of behaviours in SMEs. To achieve this goal, objectivist philosophy will guide the researcher to predict and explain this phenomenon by detaching form the context under investigation.

Thirdly, the quantitative approach is appropriate when the research problem under investigation can be easily operationalised and measured from a quantitative point of view. For example, in this research, the key factors for firm's innovation and hypothesised relationships between them can be identified through comprehensive literature review. Given the structured nature of the research problem and objectives and that sufficient evidence is available to formulate hypotheses for testing, it is deemed that a quantitative survey method can be used to measure the characteristics of elements or sample members.

Therefore, an investigation of casual relationship between various key factors and firm's innovation and business performance in the context of Chinese high-technology SMEs would not be revealed adopting a qualitative approach, the reason being that qualitative research does not suit the present research problem and research aim.

3.3 Research Design: Quantitative Research Strategy through Questionnaire Survey

Before decisions on research strategy can be made, practical issues such as the nature of the topic and the research questions need to be considered (Bryman and Bell, 2007). As noted before, the main objective of this study is to determine the relationships between variables. For this reason, it is deemed that a quantitative strategy will be adopted with a survey utilising a questionnaire in the research methods. Surveys provide quick, inexpensive, efficient, and accurate means of assessing information about the population (Zikmund, 2003). It aims to question people regarding their attitudes, opinions or descriptions in order to record their responses for further analysis (Cooper and Emory, 1995). Several researchers (Dillman, 1978; Fowler, 1993) have identified the following advantages of surveys, and these can be used to appraise the quality of survey research. Firstly, the purpose of survey is to generate quantitative descriptions of some aspects of studied population. It can assist the social research to produce empirical data based on real-world observations. Next, in survey research, gathering information is by means of asking people structured and predefined questions. It is evident that surveys can generate large volumes of quantitative data in a short time at a fairly low cost. Finally, information is generally collected about a fraction of the study population but it is collected in such a way as to be able to generalise the findings to the population. It often remains the most feasible primary data collection method for research in a dispersed industrial group (Harzing, 1997).

3.3.1 Mail Questionnaire Method

There is no publicly available dataset that provides detailed information with regard to Chinese high-technology SMEs' strategies and performances. Given the nature of the information being sought, as well as cost and time constraints, the present study considers survey with mail questionnaire as an effective method to collect the requisite data. First, the research budget constraint should be taken into account when we start to collect data. As de Chernatony (1990) noted, mail questionnaire was advantageous to collect data due to its low costs of administration. Thus, considering the limited finance available for this study, mail questionnaire is deemed to an appropriate approach to gather data. Second, this study had to be completed within a reasonably rigid time frame. Compared with personal interviews and telephone surveys, prior research notes that mail questionnaire surveys enable the researcher not only to reach a geographically dispersed target group in tandem, but also, when respondents are difficult to contact, mail questionnaire save the considerable expense of call-backs (de Chernatony, 1990; Zikmund, 2003). As a result, the amount of time of undertaking personal and telephone interviews may militate against their use, rendering the use of mail questionnaire more feasible. Third, mail questionnaire survey allows respondents to a high flexibility, which gives more time and space to consult relative documents and materials to complete the questionnaire. As Faria et al. (1990) postulate, questionnaire surveys can increase response validity as the respondent may take time to organise thoughts before responding. In addition, compared with telephone survey or interviews where instantaneity is important, a respondent would be more likely to allocate time working though a self-administered questionnaire (Jobber et al, 1991). Given the constraints of

the study, it was decided to administer a mail-based questionnaire survey to elicit the required information from as large a sample as possible. Therefore, although the weaknesses of the mail survey questionnaire have been identified in previous studies (e.g., Churchill, 1987; Zikmund, 2003), the many advantages of the mail questionnaire survey make it an appropriate method for data collection.

3.3.2 Sampling Frame

A list of potential sample firms was obtained from multiple sources: Year Book of China Small and Medium Enterprises (2010 - 2012), China Statistical Yearbook on High Technology Industry (2010- 2012), five lists of Chinese technology-based SMEs compiled by the Economic and Information Commission (an official government department with administrative oversight of industries and enterprises) in Beijing, Guangdong, Shanxi, Zhejiang and Guangxi, two SME registration reports provided by the Management Committee of High-Technology Industrial Development in Beijing and Shanxi, company website and news archives. The final sampling frame, constituting a total of 518 Chinese high-technology SMEs, was compiled according to the following criteria pertinent to the purpose of the study: (1) following the definition of China National Bureau and the Ministry of Science and Technology, all firms in our sample are from high-technology industries, comprising electronics and information technology, bio-engineering and new medical technology, new materials and applied techniques, new energy and high-power conservation technology, environmental protection technology, modern agricultural technology, advanced manufacturing technology, aviation and space technology, nuclear-applied technology, and marine engineering technology; (2) since new technology-based ventures are a recent phenomenon in China, we limited the sample to SMEs, according to previous studies (e.g., Zeng et al., 2010), whereby an SME has fewer than 500 employees, and a total

value of sales below 5 million RMB; (3) for cost and time constraints associated with data collection, the location of the Chinese high-technology SMEs was limited to high technology experimental zones or clusters in the Beijing, Zhejiang, Shanxi, Guangxi, and Guangdong. These municipalities and provinces were selected to represent the geographic, economic, and demographic diversities and reflect R&D activities and innovation practices across different areas of China. For example, Beijing, as the capital city in China, has the most developed high-technology industry zones such as Zhongguancun Science Park; Zhejiang is economically developed province in the Yangtze River Delta in eastern China; Shanxi is the one of most important provinces in the middle area of China; Guangxi is an important autonomous region of southern China; and Guangdong is the most developed province in the Pearl River Delta in southern China.

3.3.3. Development of the Questionnaire

Our research instrument was developed by drawing on the guidelines suggested in the literature so as to alleviate the common pitfalls associated with questionnaire design (Churchill, 1987; Foddy, 1993; Oppenheim, 1992). As Gill and Johnson (1997) suggested, a focus should be placed on specifying the dependent, independent, and extraneous variables in order to conceptualised and structure the survey questionnaire. Further, it is crucial to consider the control of extraneous variables in designing the survey questionnaire so that the requirement of appropriate statistical techniques can be accommodated (Gill and Johnson, 1997).

The development of the questionnaire was guided by literature review, consultation with experts and a pilot test. Through an extensive review of the extant literature, the main variables relating to managerial networking, human mobility, strategic orientations and performance of SMEs in high-technology industry in China were identified (e.g., Li

and Atuahene-Gima, 2001; Luo, 2003; Wiklund and Sheperd, 2003; Hoskisson et al., 2000; and many more). The literature review process provided us a stretch of the key questions to be asked.

The initial English language version of the questionnaire was discussed with three academics in the relevant field who had experience using cross-cultural questionnaire survey, and was subjected to a back-translation process (Brislin, 1970), being first translated into Chinese and then three Chinese bilingual researchers in the field blind-translated it back into English. The translation and back-translation process continued until the Chinese and English language versions substantially agreed with each other (Adler et al., 1989).

The questionnaire in this study was structured in eight sections: (1) general information; (2) human mobility; (3) managerial networks; (4) strategic orientations; (5) human resources management; (6) external environments; (7) innovation performance; (8) firm performance. Most of questions from the questionnaire are consisting of multiple parts.

The questionnaire was meticulously designed to be easy to complete. There are two types of questions in our questionnaire: categorical questions of a factual nature and questions designed to measure the attitude and perceptions of the respondents. It is commonly that categorical questions are placed in the background section to ask for factual information (respondent's job title, year of founding, industry types, etc.).

The use of parametric techniques using nominal and ordinal scale measurement should be taken into account when conducting questionnaire survey research. For example, Stevens (1946) posits that only non-parametric procedures would be suitable with nominal and ordinal scales. Nevertheless, Hair et al. (1998) argue that various scaling techniques may offer 'equivalent results' independently on different statistical techniques. Further, Gaito (1980) confirms that scale properties as a requirement for the

use of various statistical procedures are not necessary. It should be noted that ordinal categorisation of attitude and perception was considered a more realistic task for respondents than the use of interval or ratio measures (Geringer, 1991). Given that respondents are not willing to spend too much time on completing the questionnaire, the Likert-scale measurement appears to be more feasible and less complex, even though an interval-approximating method such as a Thurstone-type scale is more precise. Questionnaire were restricted to 5-point scales since it was more numerous response categories would exceed the respondent's ability to discriminate, resulting in 'noise' rather than more precise data.

In order to make the items of the questionnaires clear and unambiguous, a pilot study is deemed to necessary for this study. As Saunders et al. (2002:38) state, 'the purpose of a pilot test is to refine the questionnaire so that respondents will have no problems answering the questions and there will be no issues in recording the data'. Pilot study can be seen as standard practice and now widely adopted in social science research (Moser and Kalton, 1971). The Chinese language questionnaire draft was pre-tested for instrument validity with 5 founders and 9 senior managers from 12 SMEs from Beijing, Zhejiang and Shanxi provinces. To mitigate the effect of the 'native category problem' (Buckley and Chapman, 1998), founders and managers from these firms were asked to identify any unclear and ambiguous questions. We modified and refined the survey instrument based on feedback and comments received from those respondents. Results of this pilot test indicated that there is a high consistency between meanings and their understandings as management practitioners.

3.3.4. Respondent Selection

To ensure good-quality replies and to enhance the response rate, we identified the most senior and knowledgeable informants to whom the questionnaire was addressed. The

underlying assumption of this approach is that the person, by virtue of his/her position in the organisation's hierarchy, is able to provide opinions and perceptions that are valid reflections of those of other key decision-makers in the firm (Phillips, 1981). In particular, the study required respondents with comprehensive knowledge of SMEs' entrepreneurial strategies and daily operations so that they likely provide specific information about the firm. These requirements necessitate identification of respondents are top managers or founders who had intimate involvement in SMEs business activities and had access to the requisite data. In addition, given cost and time constraints this study only collected data from a single respondent in each organisation.

3.3.5. Mail Survey

The most frequently considered advantage of mail questionnaire survey is its ability to gather data from large industrial populations, thereby allowing quantitative analysis in the testing of inferences, and also the potential to generalise the findings (Cragg, 1991). It can be argued that the most serious problem of the mail survey is that of non-responses, since it has implications for both the quantity and quality of the data obtained. As noted in previous research, a high response rate offers confidence in any findings derived from a mail survey and hence various techniques have already been suggested in the literature for improving responses rates (i.e., Dillman, 1978; de Chernatony, 1990; Churchill, 1987; Jobber and O'Reilly, 1996). Diamantopoulos and Schlegelmilch (1996) undertook an extensive review of the relevant literature, and identified the various design and implementation factors studied in the past. In their research, they summarise the individual issues addressed in the previous literature and organise the associated findings under eight main headings in terms of survey sponsorship, the cover letter, the questionnaire, anonymity/confidentiality, contacts,

postage, and monetary incentives. Their summary of the suggested guidelines is shown in Table 3.3.

Table 3.3 Guidelines for Mail Survey Design and Implementation

	Motivate potential respondent by	Used in this study
Survey sponsorship	Having study approved by an organisation valued by the respondent	Yes
Cover letter	Personalising the cover letter by having it individually typed and signed, personally addressed to respondent and stating the researcher's job	Yes
The questionnaire	Requesting information of personal interest of respondent, preferably easily accessible and not of a confidential/controversial/sensitive nature	No
Anonymity/ confidentiality	Providing assurances that anonymity and confidentiality will be maintained	Yes
Contacts	• Pre-notifying the respondent by telephone, letter or fax • Conducting the study at 'normal' periods • Using initially a telephone reminder and, if needed, subsequently backing it up by a duplicate questionnaire	Yes
Postage	• Providing a stamped addressed return envelope • Possibly using first class postage (if funds are not a great problem)	Yes
Monetary incentives	Provision of financial incentive	No
Non-monetary incentives	Promising a summary of the study's result without requesting surrender of anonymity	Yes

(Adapted from Diamantopoulos and Schlegelmilch, 1996)

Survey Sponsorship

As Diamantopoulos and Schlegelmilch (1996) posit, company executives appear to be more positively disposed towards surveys emanating from academics. They also maintain that the nature of university sponsorship (university-sponsored research) is likely to have a higher response rate. It can be argued that a high rate of participation

can be obtained from the mail questionnaire survey when it is undertaken with approval from an organisation such as university. This situation is reflected in the cover letter by the signatures and job descriptions of the researchers participating in the study, and the logo of Royal Holloway University of London.

The Cover Letter

The cover letter is aimed to offer a brief description the research to respondents, and indicate its academic and managerial importance followed by an explanation of why the opinions of the particular respondent would be valuable. The covering letter was printed on Royal Holloway University of London headed paper, and was highly personalised in terms of salutation, job title and signature. Confidentiality and anonymity were guaranteed. Following Saunders et al. (2002, 2007), the structure of the cover letter composing of the following content:

- The purpose and importance of the study

- Promise of confidentiality and anonymity

- Correspondence details of researchers

- Expression of gratitude to the respondent for their support

The cover letter satisfies the suggestion of a maximum of one page. A sample copy of the cover letter in English and in Chinese is produced in Appendices A and B, respectively.

Questionnaire Design

In accordance with procedures suggested by Diamantopoulos and Schlegelmilch (1996), the physical nature of the questionnaire is construed. While controversy still remains about whether or not the response rate will be higher using a short rather than a long questionnaire, the previous literature indicates that response rates are not depressed

when long questionnaires are adopted (de Chernatony, 1990). The questionnaires in English and in Chinese version used for this study are produced in Appendices C and D, respectively.

Anonymity/ Confidentiality

Assurances were provided that all responses would be treated confidentially and neither the respondent nor its organisation will be identified during the analysis and report stages of the study (Diamantopoulos and Schlegelmilch, 1996). Such assurances were incorporated into the cover letter and served to put the respondent's mind at ease regarding subsequent information disclosure. A promise of anonymity/confidentiality was also reiterated at the beginning of the questionnaire.

Postage

It should be noted that our data collection was conducted in China. Due to the international character of the survey, it was not possible to send pre-paid envelopes to the respondent. Some outgoing questionnaires were posted via Royal Holloway University of London postal service. Only a pre-addressed return envelope was enclosed, without pre-paid postage. In order to increase the response rate, some questionnaires were hand delivered by contact persons located in Beijing, Zhejiang, Shanxi and Guangxi, and subsequently collected directly from the respondents.

Non-monetary incentives

Only one type of non-monetary reward, and offer of a summary of the study's findings (with anonymity maintained), was given to respondents to positively influence the likelihood of response.

3.3.6. Response Rate

Using a structured questionnaire and the key informant approach, Chinese SMEs in high-technology industry were contacted in 2012 and agreed to participate. As a result, a total of 518 questionnaires were delivered (by post and by hand) in late 2012. To achieve good-quality replies and to increase the response rate, an effort was made to identify the key and most knowledgeable informants to address the questionnaire. The Economic and Information Commission in the provinces and the municipalities where our sample SMEs are located were consulted to identify top-level executives in the company. Further, telephone contacts were made to locate the most appropriate executive directors/managers who had intimate knowledge and experience in SMEs' daily business operations, and to gain their support for the questionnaire survey. Company websites were also used to verify the current contact details and to record personnel changes if any.

To encourage participation in the survey and provide motivation for accurate responses, the respondents were guaranteed anonymity (Adler et al., 1989) and were promised a summary report of research findings if requested. After three reminders (by means of telephone, fax, or follow-up post), we received 279 completed questionnaires but 19 were excluded from the analysis due to missing values. Thus, we obtained 260 usable questionnaires, indicating the effective response rate was 50.2% (260/518). This is a relatively good response rate given the well-documented difficulties of obtaining questionnaire responses from the worldwide industrial population in general (Harzing, 1997) and from Chinese managers in particular (Adler et al., 1989). Our response rate is comparable with previous studies on technology-based firms in the Chinese context, notably Li and Atuahene-Gima (2001), Sheng et al. (2011), Shu et al. (2012) and Tang et al., (2008).

3.4 Content Validity and Instrument Reliability

Drawing on previous studies, this study assessed the validity of the instrument (e.g. the extent to which it measures what it intends to measure) by examining its content validity, as well as investigated reliability (i.e. the extent to which measurement is precise, repeatable and consistent) by using Cronbach's alpha coefficient.

The validity of a measuring instrument can be assessed by seeking evidence of its pragmatic, content and construct validity (Churchill, 1987). Content validity refers to the agreement among professionals that a scale logically seems to accurately reflect what it intends to measure, despite of its subjective and judgemental determination (Emory, 1980; Zikmund, 2003). The content validity of the survey instrument was established in several steps. First, an extensive literature review was conducted to identify and develop the questionnaire items. Second, the preliminary questionnaire was discussed and analysed with three academics in the relevant field. Finally, one pilot test was undertaken with the aim of providing the final shape to the data collection instrument.

The reliability of the instrument can be investigated by using Cronbach's alpha coefficient which can be seen as one of the most widely used reliability measures (Bryman and Cramer, 1997). It should be noted that although an alpha value of 0.70 is often considered the criterion for internally consistent established scales, Nunnally (1978) suggests the alpha value of 0.50 to 0.60 is acceptable in the early stages of research. Further, sample size is an important consideration in the discussion of internal consistency, as the tests of significance were explicitly developed for large samples (Nunnally, 1978). It seems that more confidence is placed in the accuracy of the alpha values which are derived from a large sample (at least a sample size of 30 or more). The Cronbach alpha results for the constructs are reported in each of the relevant chapters.

3.5 Check for non-response bias

We checked the possibility of non-response bias based information obtained from the China business directory of industry and commerce (2010). From these resources we were able to compare some firm attributes between 89 responding firms and 153 non-responding firms (not all the firms in the sampling frame were listed in the above source), identified from the code signs we stamped on each questionnaire. The mean difference between respondents and non-respondents with respect to the primary industry sector, number of employees, and length of operations, registered capital and provincial location was tested using an unpaired t-test. All t-statistics were insignificant, confirming no systematic bias between responding and non-responding firms. To further check the representativeness of the sample, the mean of the registered capital of 25 responding SMEs in Zhejiang was compared with that of the local population of firms, using information obtained from the local Economic and Information Commission. The t-test result was insignificant, suggesting good external validity.

3.6. Data Analysis

Data analysis reported in Chapters 4 to 7 were conducted using the SPSS 19.0 statistical package for Windows. An important issue in data analysis is the examination of data with regard to a number of criteria. This examination was undertaken following with the suggestions by previous studies such as Field (2013). The data were examined with regard to normality, linearity, homogeneity of variance, as well as outliers and missing values. In addition, the initial examination checked for any violation of assumptions of parametric statistical tests by means of graphical and descriptive summary statistical measures such as histogram, scatter-plots, skewness and kurtosis. Through a careful examination of data, a number of cases were dropped from the data set due to excessive missing values.

3.7 Sample Characteristics

Respondent's gender. As shown in Table 3.4, out of the 260 respondents, 170 (65.4%) are male and 90(34.6%) are female.

Respondent's education level. Of the 260 respondents, 154 (59.2%) have bachelor degree, 74(28.5%) master degree, 11(4.2%) PhD degree and 21 (8.1%) respondents hold professional qualification.

Respondent's position. Out of the 260 respondent, 41(15.8%) were from founder or chairman, and 94 (36.2%) were from top-level management, holding positions in terms of chief executive officer (CEO), general manager, or managing director. The remaining 125 (48.1) respondents also hold top position in the Chinese SMEs, including R&D manager, or chief engineer.

Legal status. As indicated in Table 3.4, of the 260 SMEs, 38 (14.6%) are state-owned enterprises (SOEs), 14(5.4%) collective enterprises (i.e. town and village enterprises), 191(73.5) privately-owned enterprises, 13(5.0%) foreign-invested enterprises, 2(0.8%) joint ventures, others (0.8%).

Types of high-technology industry. Out of the 260 SMEs, 72 (27.7%) are from electronics and information technology sector, 55(21.2%) bio-engineering and new medical technology, 21(8.1%) new materials and applied techniques, 17(6.5%) new energy and high-power conservation technology, 19(7.3%) environmental protection technology, 17(6.5%) modern agricultural technology, 56(21.5%) advanced manufacturing technology, 2(0.8%) aviation and space technology, 1(0.4%) nuclear-applied technology.

Location. Departing from previous studies which only focus on Beijing, Shanghai or Guangdong that can be seen as the relative developed regions in China, this study tends to tap into some other regions such as Shanxi and Guangxi. For example, out of the 260

SMEs, 49 (18.8%) are from Beijing, 66 (25.4%) are from Zhejiang, 58 (22.3%) are from Shanxi, 51(19.6%) are from Guangxi, and 36 (13.8%) are from Guangdong.

Table 3.4 shows the sample characteristics. The sample comprises 260 Chinese SMEs in high-technology industry.

Table 3.4 Sample Characteristics

Sample Characteristics	Frequency	%
Gender		
Male	170	65.4%
Female	90	34.6%
Level of Education		
Bachelor Degree	154	59.2%
Master Degree	74	28.5%
Ph.D. Degree	11	4.2%
Professional qualification	21	8.1%
Position		
Founder/Chairman	41	15.8%
CEO/General Manager/Managing Director	94	36.2%
R&D Manager/Chief Engineer	125	48.1%
Legal Status		
State-owned enterprises (SOEs)	38	14.6%
Collective enterprises (CEs)	14	5.4%
Privately-owned enterprises (POEs)	191	73.5%
Foreign-invested enterprises (FIEs)	13	5.0%
Joint ventures (JVs)	2	0.8%
Others	2	0.8%
Types of high-technology industry		
Electronics and information technology	72	27.7%
Bio-engineering and new medical technology	55	21.2%
New materials and applied techniques	21	8.1%
New energy and high-power conservation technology	17	6.5%
Environmental protection technology	19	7.3%
Modern agricultural technology	17	6.5%
Advanced manufacturing technology	56	21.5%
Aviation and space technology	2	0.8%
Nuclear-applied technology	1	0.4%
Marine engineering technology	0	0
Location		
Beijing	49	18.8%
Zhejiang	66	25.4%
Shanxi	58	22.3%
Guangxi	51	19.6%
Guangdong	36	13.8%
N = 260		

3.8 Summary

This chapter discusses the research methods by which the secondary and primary data for the study were garnered. The secondary data collection method entails mainly the examination of published sources of both public and private organisations.

The research objectives of the present study are to investigate the relationships between managerial networking, human mobility, strategic orientations and firm innovation and business performance in the context of high-technology SMEs in Chinese emerging economy. Given the lack of a publicly available database that incorporates the necessary information, it is necessary to contact local Chinese SMEs directly in order to access to the requisite data.

The issue of which research method to employ to collect primary data involved a consideration of different approaches in terms of personal interviewing, telephone interviewing and mail questionnaire. Given the nature of information being sought (both factual and opinion based covering several critical areas of entrepreneurial strategies and daily business operations), it was decided to administer a mail questionnaire so as to overcome time and financial constraints of the study. The final form of the questionnaire was derived from a process that embraced questions reported in the existing literature and information obtained from semi-structured personal interviews with a representative group of Chinese managers, who were knowledgeable about their firms' operations in China.

For enhancing the rate of response, this study follows the guidelines suggested by Diamantopoulos and Schlegelmilch (1996) to undertake the mail questionnaire survey. A useable response rate of 50.2 percent was obtained for the questionnaire. The response rate is reasonably good for the type of mail survey employed by this study.

The analysis of the primary data is presented in Chapters 4 to 7. The background literature, definition and operationalization of variables, as well as research hypotheses of the study are provided in each of the empirical chapter, respectively.

<center>**Chapter 4**</center>

<center>**The Role of Managers' Political and Business Networking in High-Technology**</center>

<center>**SMEs New Product Performance: Evidence from China's Emerging Economy**</center>

4.1 Introduction

Managerial networking - managers' boundary-spanning activities and their associated interactions with external entities - has grown as an indispensable theme in organisation and management research in emerging economies in recent years (Park and Luo, 2001; Peng and Luo, 2000; Xin and Pearce, 1996). It is deemed that such connections and linkages provide several benefits to firms including helping them to improve technical and management skills, as well as develop and commercialise innovative products (Li and Atuahene-Gima, 2002).

In parallel with the increased interest in managerial networking, scholars are paying more attention to strategies of technology-focused entrepreneurial firms and their role in promoting industrial development since they are expected to play a greater role in economies as they develop (Stinchcombe, 1965; Oviatt and McDougall, 1994; Zhao and Aram, 1995). Recently, studies indicate that these new technology-based ventures suffer from the liability of smallness and newness, because they often lack adequate knowledge of their environments, new product development experience, as well as managerial and financial resources (Shan, 1990; Zahra and Covin, 1993). Indeed, it is particularly true for high technology small and medium-sized enterprises (SMEs) in emerging markets in which firms are required to constantly deal with environmental volatility, to grasp appropriate information and knowledge for their product innovation in a timely manner, and to establish new markets and technologies because of dynamic market and technology changes (Katila and Shane, 2005; Li and Atuahene-Gima, 2001; Zhang and Wu, 2013). Consequently, it is expected that mobilising external resources is

<center>71</center>

a key to new technology SMEs' success, and networking is considered to be a major source to do so (Semrau and Werner, 2014).

Previous studies have demonstrated that the impact of different types of managerial connections on SMEs' innovation and performance in developed markets with relatively stable institutional environments (Miotti and Sachwald, 2003; Belderbos et al., 2004; Faems et al., 2005; Nieto and Santamaria, 2007; Semrau and Werner, 2014; Sullivan and Ford, 2014). For instance, an analysis of the U.S. biopharmaceutical industry from 1984 to 2006 suggests that SMEs are able to capture greater benefits from their connections with large firms (Yang, Zheng, and Zhao, 2014). Another research conducted by Sullivan and Ford (2014) in the state of Florida in U.S. indicates that during early venture development, entrepreneurs may manage their networks to refine the overall number of resource providers as well as the diversity of knowledge resources that they have access to. Furthermore, using the data from 18 member-states of the European Union, Gallego, Rubalcaba, and Hipp (2012) find that an important innovation pattern of small firms is intensively using of external knowledge via different network linkages. Based on a sample of 379 nascent entrepreneurs from Germany, Semrau and Werner (2014) find that network relationships provide access to start-up relevant resources in terms of financial capital, knowledge and information, and additional business contacts, and thereby contributing to firm performance.

There is a paucity of research on how managerial networking is related to high-technology SMEs' new product performance in emerging economies that are experiencing significant institutional changes in moving from central planning to market competition (Peng, 2003; Peng and Luo, 2000). In addition, few studies have investigated the roles of political networking and business networking in high-technology SMEs new product performance simultaneously. Since the market

mechanism (i.e., the allocation of resources mainly by market forces) and the redistributive mechanism (i.e., allocation mainly by governmental agencies) coexist in transition economies, SMEs in high-technology industries need to have different types of managerial resources to deal with the redistributive power and the market forces, respectively, for better product innovation and performance (Nee, 1989; Li and Zhang, 2007). More important, it can be argued that the effectiveness of managerial networking is not universal but rather dependent on the peculiarities of the emerging economic environment. Prior studies have noted that external environment conditions are likely to affect managers' desire and effort in establishing and exploiting managerial networking with external entities (Luo, 2003). SMEs in high-technology industries in China face more complex and uncertain environmental situations, and hence we assume that industrial condition such as industry growth may moderate the link between managerial networking and firms' new product performance. So far, however, few studies have addressed this issue.

In this study, we aim to address the above gaps by examining the roles of managers' political networking and business networking in SMEs in China's high-technology industries. Specifically, we will address two research questions: (1) How are political networking and business networking related to high-technology SMEs new product performance in an emerging economy such as China? (2) How does environmental context (perceived industry growth) moderate the link between managerial networks and new product performance? According to social capital theory (Adler and Kwon, 2002; Burt, 1992; Portes, 1998), we argue that both political and business networking will have positive relationships with high-technology SMEs new product performance. This is consistent with the argument that managerial networking can help firms secure resources and overcome the limits of insufficient institutional infrastructures, particularly in uncertain environment (Peng and Luo, 2000; Xin and Pearce, 1996).

Further, to extend this line of research, in this study we examine the moderating effect of perceived industry growth in managerial networking. Thus, we argue that managers' political and business networking will have stronger relationships with high-technology SMEs new product performance when the perceived industry growth is high than when it is low. Taken together, this study makes an effort to provide a deeper understanding of the relationship between political and business networking and new product performance in the context of Chinese SMEs in high-technology industry. The conceptual framework is provided in Figure 4.1.
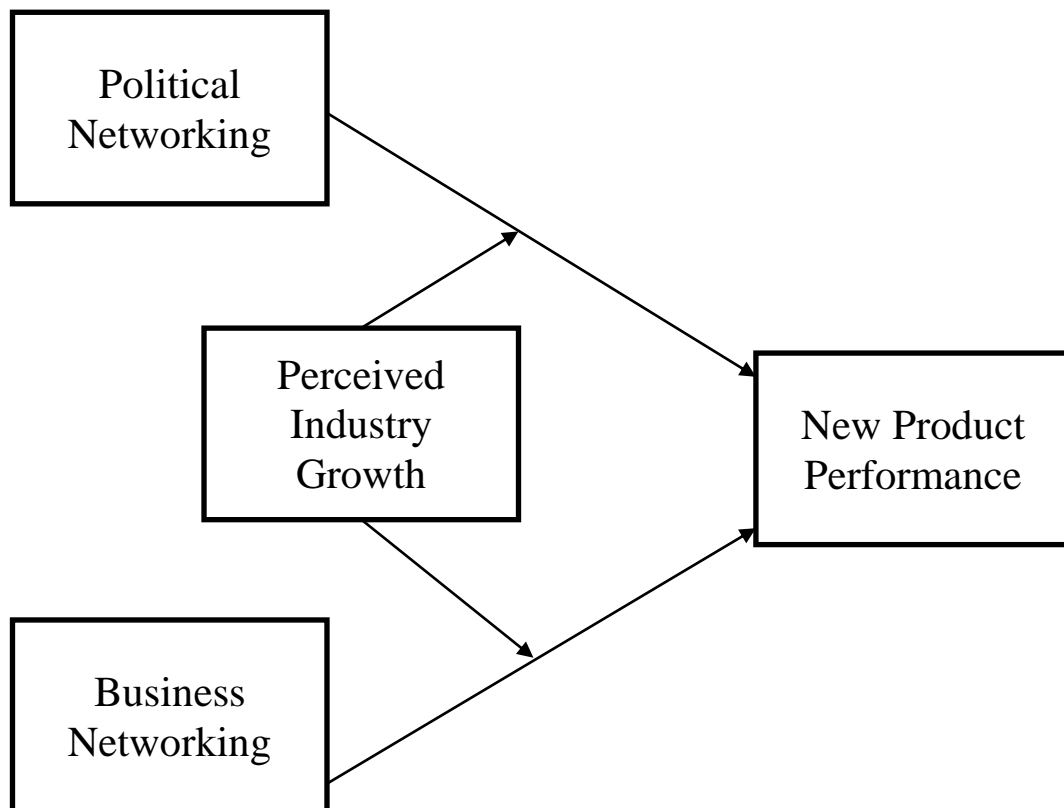
Figure 4.1 A conceptual model of managers' political and business networking in high-technology SMEs new product performance in China

This paper seeks to offer a number of contributions to the literature. First, by focusing on high-technology SMEs in China, it extends prior research on social networking and helps advance the existing knowledge about the critical role of managerial networking in SMEs' innovation in high-technology industries. Second, this study enriches social capital and network theory by conceptually distinguishing and empirically testing two types of managerial connections: political and business networking, and further reveals that political networking has a stronger performance impact, despite the institutional infrastructure has improved in the context of high-technology SMEs in China. This represents a response to the call by Peng and Luo (2000) which suggests that two types of managerial networking need to be distinguished in studying the networking – performance link in emerging economies. Finally, it examines whether the effects of business and political networking are conditional on external environment condition such as perceived industry growth, which deepens the understanding of new product development performance for SMEs in high-technology industry.

The remainder of this paper is organised as follows. First, after reviewing the prior literature on the role of political and business networking in firm's innovation and performance, we develop research hypotheses. Then, we describe our research methods used in this study. Finally, we present the research findings, theoretical and managerial implications, limitations and future research directions.

4.2 Theoretical Background and Hypotheses

4.2.1 Social Capital and Managerial Networking

The resource-based view of the firm (RBV) suggests that a firm can gain a competitive advantage through accumulating and deploying its valuable, rare, inimitable and non-substitutable resources (Barney, 1991; Teece et al., 1997; Wernerfelt, 1984). It is argued that social capital functions as a prominent intangible resource for a firm (Adler and

Kwon, 2002; Chisholm and Nielsen, 2009; Luo, 2003; Wright, Dunford, and Snell, 2001). Social capital is the resource, actual or potential, that accrues to an organisation by virtue of possessing a durable network of more or less institutionalised relationships of mutual acquaintance and recognition (Colemann, 1988; Nahapiet and Ghoshal, 1998). The previous literature postulates that social ties and networks may enable entrepreneurs to identify opportunities, facilitate the flow of knowledge among partners, as well as build legitimacy for their firms, which in turn increase the effectiveness of their strategies and achieve better performance (Gulati, 1998; Stam, Arzlanian and Elfring, 2014). Therefore, in this study, we link social capital theory with the resource-based view of the firm, and apply it to new technology SMEs in China's emerging economy context.

Social capital has been gaining prominence as an intricate concept that provides a foundation for describing and characterising a firm's set of relationships (Inkpen and Tsang, 2005), and has been defined from different perspectives (Adler and Kwon, 2002; Burt, 1997; Portes, 1998). For this study, we adopt the well-established definition of social capital articulated by Nahapiet and Ghoshal (1998). Social capital refers to "the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit" (Nahapiet and Ghoshal, 1998: 243). Social capital engendered by the fabric of social networks can be mobilised to facilitate actions (Adler and Kwon, 2000). These potential and actual resources can provide three key benefits to the focal actors in a network: information, influence, and solidarity (Adler and Kwon, 2002; Uzzi, 1997). According to Adler and Kwon (2000, 2002), information benefit refers to the advantage of social capital in providing access to broader sources of information and improving information's quality, relevance, and timeliness; power benefit describes social capital in enabling firms to get things done and achieve their goals; and solidarity benefit refers

to social norms and beliefs that encourage network members to act in compliance with local rules and customs and reduce the need for formal controls.

Two types of managerial networking have been identified in the literature: (1) connections with officials at government authorities and regulatory agencies, and (2) connections with managers at other business organisations, such as buyers, suppliers, competitors, and other business intermediaries (Peng and Luo, 2000). The former is referred to as political networking and the latter as business networking. Political networking, in this study, is defined as the extent to which managers cultivate relationships with government officials (Li and Zhang 2007). As Xin and Pearce (1996) suggest, political networking functions as a substitute for formal institutional infrastructure and thereby may help SMEs in high-technology industries to weather the redistributive power. Following Luo et al. (2012) and Peng and Luo (2000), this study defines business networking as managers' connections with their counterparts in other firms, such as buyers, suppliers, competitors and other business intermediaries. In general, firms, especially SMEs, build various business connections with different parties to help them maximise their economic returns.

Managerial networking can be regarded as a strategic posture or an informal governance form because social capital embedded within and derived from networks and linkages possessed by a firm can be employed for its benefits (Luk et al., 2008; Park and Luo, 2001). Managers' social capital such as the relational and structural resources can be transferred to their firms because managerial networking involves managers using their interpersonal connections and networks to exchange favours and reciprocal obligations for organisational purposes (Peng and Luo, 2000). Specifically, according to Stam, Arzlanian, and Elfring (2014), relational dimension of social capital consider the nature and quality of interactions between exchange partners, highlighting a possible trade-off

between weak and strong ties. Structural dimension of social capital addresses how the position of entrepreneurs in a structure of relationships generates advantage (Stam et al., 2014). Hence, Gulati (1998) suggests that managerial ties and networks can enable firms to gain access to resources and information, facilitate the flow of knowledge among different partners, as well as obtain external legitimacy and status, which are conducive to overall firm performance.

The relationship between managerial networking and firm innovation performance has been examined in previous studies. For instance, Nieto and Santamaria (2007) suggest that cooperation with different types of partners have a positive impact on the degree of innovation novelty which is based on the characteristics of the product innovation to distinguish a greater or lesser degree of newness of the innovation. Tsai (2009) examines the impacts of collaborations with different partners including suppliers, customers, competitors, or research institutes and universities on product innovation performance measured by innovative sales productivity (i.e. the sales generated by new products per employee). In examining the cooperation patterns of Zhongguancun SMEs in China, Liefner et al. (2006) find that using cooperative ties with foreign firms helps SMEs obtain new ideas and penetrate the market with new products; whereas ties with universities or colleges are used mainly to help them develop the new technology and innovative products. Based on a survey among SMEs in Shanghai, Zeng et al. (2010) find that there is a significant positive relationship between connections with different external partners and the innovation performance, which is measured by using three indicators: proportion of annual turnover of new products, new products index and modified products index. Arguably, SMEs are at a disadvantage when it comes to intangible resources, such as having a limited range of knowledge and human capital skills than large firms, hence managerial networking represents a complementary response to insecurity arising from development and use of new technologies, while at

same time reducing uncertainties in innovation (Cumbers et al., 2003). As such, bridging the gap in social capital derived through external connections may be especially important for SMEs to obtain advanced technology and ideas, which in turn enhances their innovation performance.

As discussed above, social capital theory recognises the importance of managerial ties and networks for managers and firms and posits that tangible advantageous outcomes, such as privileged access to knowledge and information, preferential opportunities and enhanced reputations, can be obtained through managers' social networks and linkages (Inkpen and Tsang, 2005). Managerial networking enables SMEs to access external knowledge and information, hence stimulating the firms' innovative performance.

Political Networking

Managerial networking posit that top managers attempt to utilise personal contacts and linkages with external entities in order to reduce transaction costs through facilitated exchange of resources, information, and knowledge (Luo, 2003). Previous research has noted that transition economies represent an institutional context characterised by a lack of well-established legal framework to define property rights (Choi, Lee, and Kim, 1999; Hoskisson et al., 2000). The lack of strong legal frameworks has allowed widespread opportunistic behaviours and has affected the ability to enforce property rights even where legislation has been enacted (Hoskisson et al., 2000; Li and Zhang, 2007). Under such conditions, transactors increase their investments in specialised assets, transaction costs increase because transactors must safeguard against the hazards of opportunism (Dyer, 1997; Williamson, 1985).

Further, because the government still controls significant portions of strategic factor resources (e.g., land, raw material, financial capital, labour market, and so on) and has considerable power to approve projects and allocate resources, managers tend to

maintain a disproportionately greater connection with government officials at various levels of administrative and regulatory agencies (Child, 1994). In such an environment, political networking is seen as a potential substitute for the insufficient formal institutional infrastructure in emerging economies because social capital engendered from connections with government and administrative officials can help alleviate firms' resource inadequacy (Li and Atuahene-Gima, 2001; Xin and Pearce, 1996). More specifically, political networking can help firms obtain key regulatory resources encompassing industry development plans and regulatory policies, offer access to scarce resources, and improve a firm's political legitimacy which allows firms to receive exclusive government endorsements and favourable treatment (Sheng et al., 2011)

It is notable that high-technology industries, as examined in this study, are labelled as strategically important industries in China. The Chinese government has provided strong support in terms of financing, information, and technology for firms in high technology industries through institutional devices and regulatory regimes (Li and Zhang, 2007; Lu, 2000). However, compared with state-owned enterprises (SOEs) founded by the government or its agencies, non-state-owned ventures receive little support from the government and lack market legitimacy, thus they are in a relatively weak institutional position (Nee, 1992). This is particularly the case when we consider SMEs in high-technology industries in China, most of which are privately owned ventures. These SMEs may naturally suffer from liability of newness and smallness in China's emerging economy. Given the weak institutional arrangements in China, cultivating political networking is argued to be an effective way for high-technology SMEs to gain needed resources and influence to support new initiatives, which in turn improve firms' innovation outcomes (Peng and Heath, 1996; Xin and Pearce, 1996). This discussion leads to the following hypothesis:

Hypothesis 1: Managers' political networking will be positively related to high-technology SMEs new product performance in China.

Business Networking

As mentioned earlier, business networking is a firm's informal social connections and networks with business organisations including buyers, suppliers, competitors, and other business intermediaries. While political networking offers firms regulatory resources, business networking provides firms with important market resources. First, managers build and maintain personal interactions and linkages with different business partners in order to obtain crucial market information that may not be available in the open market, such as product information, pertinent events or changes in the market, and information about trustworthy and untrustworthy partners (Sheng et al., 2011). Second, by connecting and collaborating with other firms, a firm can learn from its partners and then facilitate knowledge transfer and technology acquisition (Rindfleisch and Moorman, 2001). Third, firms can obtain network legitimacy in a business community by cultivating business networks (Rao et al., 2008). Such legitimacy is a strategic resource that may help firms attract potential business partners, facilitate commercial transactions, and offer economic and operational benefits (Dacin et al., 2007).

In particular, firms can advance its product innovation by interacting and connecting with different business partners. For example, working with buyers not only provides benefits in identifying market opportunities and trends for technology development, but also reduces the chances of poor design in the early stages of development, and hence increases the chances of new product development and success (Tsai, 2009). Suppliers may contribute specialised information, technologies and capabilities that are critical to being able to produce a new product (Gao et al., 2008). Thus connections with suppliers

may help firms identify potential technical problems, and in turn speed up new product development and responses to market demand (Kessler and Chakrabatri, 1996). Since business networking with buyers and suppliers are mainly based on personal trust, commitment, and mutual dependence, it constrains opportunistic behaviours, reduces the perceived risks and transaction cost, and encourages long-term cooperation (Ganesan, 1994).

Previous research indicates that firms cooperating with their competitors are likely to perform better in innovation than they would otherwise (Inkpen and Pien, 2006). Building connections with competitors enable firms to ascertain their competitors' technological level and obtain information about competitors' technology strategies, motivating firms to differentiate themselves (Linn, 1994). Moreover, firms involved in a cooperative agreement with rivals may accelerate their R&D capabilities, which allows them to reduce the time and risk involved in technological innovation (Belderbos et al., 2004).

Other business intermediaries play the important roles in supporting innovation of firms. In general, business intermediaries perform a variety of functions in innovation, encompassing R&D communication, foresight and diagnostics, information scanning and gathering, knowledge processing and combination, evaluation of outcomes, and technology commercialisation (Howells, 2006). Doloreux (2004) suggests that cooperation with business intermediaries for SMEs could be the source of new ideas for innovation and technological productivity. Further, SMEs actively interact with different actors such as technology centres and development organisations, financing and training institutions and technology business incubators can promote their innovative activities, and in turn enhance innovative capabilities and new product performance (Pekkarinen and Harmaakorpi, 2006). Thus, it is hypothesised that:

Hypothesis 2: Managers' business networking will be positively related to high-technology SMEs new product performance in China.

The Moderating Effects of Perceived Industry Growth

It is acknowledged that environmental characteristic can be regarded as important moderating variable in management literature. Li and Atuahene-Gima (2001) examine the role of the perceived environmental conditions as moderators of the relationship between product innovation strategy and performance in Chinese new technology ventures. They find that the relationship between the use of a product innovation strategy and the performance of new technology ventures is moderated positively by environmental turbulence. In examining manufacturing firms' strategic alliances in high-technology industry, Fang (2011) finds that external environmental factor in terms of environmental dynamism has moderating effect on the relationship between knowledge complementarity and new product innovativeness. In this study, we examine an important dimension of environment in China's transition economy: perceived industry growth.

Perceived industry growth refers to the level of managers' perceived growth of their principal industry within the last three years (Li and Atuahene-Gima, 2002; Zhang and Li, 2010). It is an indicator of industry structure and environmental munificence (McDougall et al., 1994). Industry structure indicates a key component of market attractiveness for technology-based firms in emerging economies (Luo, 2003). Miller and Cample (1985) suggest that high market growth can potentially mitigate the effect of competitive pressures on new ventures. Similarly, Porter (1980) posits that the entry of new firms in the current market will provoke less retaliation and competitive pressure by incumbent firms in a rapid growing industry. Industry growth also represents environmental munificence: the extent to which the resources required by the firm are

available in the market environment (Li and Atuahene-Gima, 2002). High industry growth is usually associated with more market opportunities, greater competitive variation, and expanded options for firms (Datta et al., 2005). The level of managerial networking is expected to increase with industrial growth because crucial external connections improve firms interactions with the business community on which the firms depends. Starr and MacMillan (1990) propose that firms may internally develop all capabilities needed to run business in a growing market, but this strategy may not be quick enough to meet organisational needs for growth and expansion in a rapidly growing industry.

When operating in a transition economy such as China, firms in high growth industries such as high technology sectors need improved relationships with different actors to create a more favourable environment in which they benefit from resource sharing or information exchange (Luo, 2003). Given the liabilities of smallness and newness, high-technology SMEs tend to be more concerned about resource constraints. Thus, in their efforts to overcome resource constraints, high-technology SMEs managers may pay particular attention to observe external environment in which they reside so as to better leverage any opportunities to obtain resources. When perceived industry growth is high, high-technology SMEs managers tend to believe that there exist more available resources regarding opportunities and options that their firms can pursue for new product development, thus, encouraging them to intensively interact with other partners in their own firms' product innovation.

Thus, we posit that:

Hypothesis 3: The positive relationship between political networking and high-technology SMEs new product performance will be stronger when perceived industry growth is faster.

Hypothesis 4: The positive relationship between business networking and high-technology SMEs new product performance will be stronger when perceived industry growth is faster.

4.3 Research Methodology

4.3.1 Sample and data collection

In this study, we focus on high-technology SMEs in China. A list of potential sample firms was obtained from multiple sources: Year Book of China Small and Medium Enterprises (2010 - 2012), China Statistical Yearbook on High Technology Industry (2010- 2012), five lists of Chinese technology-based SMEs compiled by the Economic and Information Commission (an official government department with administrative oversight of industries and enterprises) in Beijing, Guangdong, Shanxi, Zhejiang and Guangxi, two SME registration reports provided by the Management Committee of High-Technology Industrial Development in Beijing and Shanxi, company website and news archives. The final sampling frame, constituting a total of 518 Chinese high-technology SMEs, was compiled according to the following criteria pertinent to the purpose of the study: (1) following the definition of China National Bureau and the Ministry of Science and Technology, all firms in our sample are from high-technology industries, comprising electronics and information technology, bio-engineering and new medical technology, new materials and applied techniques, new energy and high-power conservation technology, environmental protection technology, modern agricultural technology, advanced manufacturing technology, aviation and space technology, nuclear-applied technology, and marine engineering technology; (2) since new technology-based ventures are a recent phenomenon in China, we limited the sample to SMEs, according to the official Chinese definition and previous studies (e.g. Zeng et al., 2010), whereby an SME has fewer than 500 employees, and a total value of sales below

5 million RMB; (3) for cost and time constraints associated with data collection, the location of the Chinese high-technology SMEs was limited to high technology experimental zones or clusters in the Beijing, Zhejiang, Shanxi, Guangxi, and Guangdong. These municipalities and provinces were selected to represent the geographic, economic, and demographic diversities and reflect R&D activities and innovation practices across different areas of China. For example, Beijing, as the capital city in China, has the most developed high-tech industry zones such as Zhongguancun Science Park; Zhejiang is economically developed province in the Yangtze River Delta in eastern China; Shanxi is the one of most important provinces in the middle area of China; Guangxi is an important autonomous region of southern China; and Guangdong is the most developed province in the Pearl River Delta in southern China.

Given the nature of the information being sought, as well as cost and time constraints, a self-administered questionnaire survey was employed to obtain the required level of data. The development of the questionnaire was guided by literature review, consultation with experts and a pilot test. The initial English language version of the questionnaire was discussed with three academics in the relevant field who had experience using cross-cultural questionnaire survey, and was subjected to a back-translation process, being first translated into Chinese and then three Chinese bilingual researchers in the field blind-translated it back into English. The translation and back-translation process continued until the Chinese and English language versions substantially agreed with each other. The Chinese language questionnaire draft was pre-tested for instrument validity with 5 founders and 9 senior managers from 12 SMEs from Beijing, Zhejiang and Shanxi provinces. To mitigate the effect of the 'native category problem' (Buckley and Chapman, 1998), founders and managers from these firms were asked to identify any unclear and ambiguous questions. We modified and refined the survey instrument based on feedback and comments received from those

86

respondents. Results of this pilot test indicated that there is a high consistency between meanings and their understandings as management practitioners.

Using a structured questionnaire and the key informant approach, Chinese SMEs in high-technology industry were contacted in 2012 and agreed to participate. To provide motivation for accurate responses, the respondents were guaranteed anonymity (Adler et al., 1989) and were promised a summary report of research findings. To ensure good-quality replies and to enhance the response rate, we identified the most senior and knowledgeable informants to whom the questionnaire was addressed. The underlying assumption of this approach is that the person, by virtue of his/her position in the organisation's hierarchy, is able to provide opinions and perceptions that are valid reflections of those of other key decision-makers in the firm (Phillips, 1981). Thus, a total of 518 questionnaires were delivered (by post and by hand) in late 2012. After three reminders (by means of telephone, fax, or follow-up post), we received 279 completed questionnaires but 19 were excluded from the analysis due to missing values. Thus, we obtained 260 usable questionnaires, indicating the effective response rate was 50.2% (260/518). This is a relatively good response rate given the well-documented difficulties of obtaining questionnaire responses from the worldwide industrial population in general (Harzing, 1997) and from Chinese managers in particular (Adler et al., 1989). Our response rate is comparable with previous studies on technology-based firms in the Chinese context, notably Li and Atuahene-Gima (2001), Sheng et al. (2011), and Shu et al. (2012).

We checked the possibility of non-response bias based information obtained from the China business directory of industry and commerce (2010). From these resources we were able to compare some firm attributes between 89 responding firms and 153 non-responding firms (not all the firms in the sampling frame were listed in the above

source), identified from the code signs we stamped on each questionnaire. The mean difference between respondents and non-respondents with respect to the primary industry sector, number of employees, the length of operations, registered capital and provincial location was tested using an unpaired t-test. All t-statistics were insignificant, confirming no systematic bias between responding and non-responding firms. To further check the representativeness of the sample, the mean of the registered capital of 25 responding SMEs in Zhejiang was compared with that of the local population of firms, using information obtained from the local Economic and Information Commission. The t-test result was insignificant, suggesting good external validity.

Table 4.1 shows the sample characteristics. The sample comprises 260 Chinese SMEs in high-technology industry.

Table 4.1 Profiles of the Sample Companies (N = 260)

Sample Characteristics	Frequency	%
Gender		
Male	170	65.4%
Female	90	34.6%
Level of Education		
Bachelor Degree	154	59.2%
Master Degree	74	28.5%
Ph.D. Degree	11	4.2%
Professional qualification	21	8.1%
Position		
Founder/Chairman	41	15.8%
CEO/General Manager/Managing Director	94	36.2%
R&D Manager/Chief Engineer	125	48.1%
Legal Status		
State-owned enterprises (SOEs)	38	14.6%
Collective enterprises (CEs)	14	5.4%
Privately-owned enterprises (POEs)	191	73.5%
Foreign-invested enterprises (FIEs)	13	5.0%
Joint ventures (JVs)	2	0.8%
Others	2	0.8%
Types of high-tech industry		
Electronics and information technology	72	27.7%
Bio-engineering and new medical technology	55	21.2%
New materials and applied techniques	21	8.1%
New energy and high-power conservation technology	17	6.5%
Environmental protection technology	19	7.3%
Modern agricultural technology	17	6.5%
Advanced manufacturing technology	56	21.5%
Aviation and space technology	2	0.8%
Nuclear-applied technology	1	0.4%
Marine engineering technology	0	0

4.4 Variables and Measurements

The survey items are adapted from prior studies to ensure the validity of all measures. As suggested by Tan (1996), all the items used in this study are corroborated through extensive consultations with senior managers to better fit the Chinese context. All the survey items are shown in Table 4.2 and are measured with a 5-point Likert scales, where 1= strongly disagree and 5= strongly agree.

The items for new product performance are adapted from Atuahene-Gima and Li (2004) and De Luca and Atuahene-Gima (2007). We measure new product performance with four items that asked respondents to indicate the extent to which the firm has achieved its product innovation objectives, such as sales growth, market share growth, growth in profit, and return on investment (ROI) relative to major competitors in its principal industry. It has been suggested that this subjective measure is more effective at avoiding non-responses than directly asking informants to provide financial measures of innovation performance (Gao et al., 2008).

We derive the measure of political networking from previous studies (e.g., Li and Zhang, 2007; Xin and Pearce, 1996). It consists of four items and attempts to measure the extent to which the high-technology SMEs' managers over the past three years have (1) spent much effort in cultivating personal connections with officials of government and its agencies; (2) maintained good relationships with officials of state banks and other governmental agencies; (3) devoted substantial resources to maintaining good relationships with officials of administrative agencies; and (4) spent a lot of money on building relations with top officials in government.

We measure business networking with four items adapted from previous studies (Luo, et al., 2012; Sheng et al., 2011). Sheng et al. (2011) suggest that a 'good connection' that is based on personal interactions and social relationships is a well-understood concept in China. The scale captures the extent to which high-technology SMEs' managers have built good connections with various market players, comprising buyers, suppliers, competitors, as well as other business intermediaries.

Following McDougall et al. (1994) and Zhang and Li (2010), we use a three-item scale to measure the perceived industry growth. The respondents are asked to indicate the extent to which they agree with the following statements in relation to their industry in

the past three years: (1) there has been high growth in demand in this industry; (2) this industry offered many attractive opportunities for future growth; and (3) growth opportunities in this industry have been abundant. The use of managers' perception of environment has been supported by a number of prior studies based on the relevance of such perception to the formulation of strategy as well as its accuracy with respect to objective measures of environmental conditions (Li et al., 2005).

Previous studies have suggested that both organisational and environmental factors may affect the link between managerial networking and new product performance. Thus, we control for several variables in testing the hypotheses. We firstly control for firm size because in transition economies such as China, information asymmetry and high transactions costs tend to favour large-sized organisations with slack resources and access to institutions, which smaller firms do not enjoy (Li et al., 2006; Zhao et al., 2011). To prevent skewness, firm size is measured as the natural logarithm of the number of employees of the firm. We also measure firm age as the number of years since the high-technology SMEs were established in China.

With regard to SMEs in high-technology industry, most of firms are privately owned, whereas others might retain some public ownership after being established as transformed SOEs or spin-offs from public institutions (e.g., local authorities or universities) or collective enterprise (Choi, Lee, and Willams, 2011; Gedajlovic et al., 2012; Liu et al., 2010; Zapalska and Edwards, 2001). Further, there are many complexities surrounding public ownership issue in China. For example, during the transitional period, Chinese governmental agencies may take minority equity stakes in some high-technology SMEs, and rarely participate in firm strategy-making and daily operations, but these SMEs are still regarded as SOEs in China (Gedajlovic et al., 2012). It should be noted that these state-run SMEs differ from SOEs since they operate

autonomously in a market-based environment, where they are more concerned about market forces and customer satisfaction. In addition, many collective SMEs are private enterprise, but they are also regarded as publicly-owned, because they are partnerships hiring several employees from the local community (Zapalska and Edwards, 2001). Thus, following previous studies (Filatotchev et al., 2009; Liu et al., 2010), this study controls firm's ownership as a dummy variable with privately-owned firms taking the value 1 and 0 otherwise.

In this study, industry is controlled because different industry sectors may have different technological and learning regimes shaping specific patterns of innovation (Choi, Lee and Williams, 2011). Following Li and Atuahene-Gima (2002), we do not use the multiple industry categories approach (e.g., coded as dummies for each) because over half of the sample falls within three high technology industries, such as electronics and information technology, bio-engineering and new medical technology, as well as advanced manufacturing technology. These three industry categories account for 70.4 % of the sample. Thus it is meaningful to create three industry dummy variables to control this potential industry effect.

We controlled for technological turbulence that is the perceived speed and magnitude of change and uncertainty in technology and new product introductions spurred by changing technology in the industry (Atuahene-Gima and Li, 2004). Following Jaworski and Kohli (1993) and Li (2005), we measure technological turbulence that ask correspondents to indicate the extent to which they agree with the following statements in relation to their industry in the last three years: (1) the technology in this industry is changing rapidly; (2) technological changes provide substantial opportunities in this industry; and (3) a large number of new product ideas have been made possible through technological breakthroughs in this industry.

It should be noted that control variables such as gender, education and age are not included in this study. As previous studies (e.g., Su et al., 2013; Zhang and Li, 2010) suggested, organisational attributes and environmental features might be more influential in new technology SMEs' strategy making and firm performance in emerging economies.

Table 4.2 Construct Measurement and Factor Analysis Results

Item description summary	Factor Loading	Standar dised loading	Eigen-value	% Variance explained	Cumulative per cent
New product performance (α= 0.87) AVE = 0.60 CR= 0.86			2.89	16.07	49.91
1. Sales growth	0.79	0.81			
2. Market share growth	0.84	0.79			
3. Growth in profit	0.74	0.67			
4. Return on investment	0.84	0.81			
Political networking (α= 0.85) AVE = 0.63 CR= 0.87			5.55	30.83	30.83
5. Spent much effort in cultivating personal connections with officials of government and its agencies	0.84	0.78			
6. Maintained good relationships with officials of state banks and other governmental agencies	0.66	0.58			
7. Devoted substantial resources to maintain good relationships with officials of administrative agencies	0.85	0.87			
8. Spent a lot of money on building relations with the top officials in government	0.88	0.91			
Business networking (α= 0.81) AVE = 0.52 CR= 0.81			1.70	9.44	56.35
9. Buyer firms	0.76	0.77			
10. Supplier firms	0.83	0.83			
11. Competitor firms	0.74	0.65			
12. Other business intermediaries	0.69	0.63			
Perceived industry growth (α= 0.85) AVE = 0.67 CR= 0.86			1.36	7.58	72.55
13. There has been high growth in demand in this industry	0.78	0.81			
14. This industry offered many attractive opportunities for future growth	0.91	0.86			
15. Growth opportunities in this industry have been abundant	0.84	0.78			
Technological turbulence (α= 0.86) AVE = 0.67 CR= 0.86			1.55	8.62	64.97
16. The technology in this industry is changing rapidly	0.81	0.79			
17. Technological changes provide substantial opportunities in this industry	0.89	0.92			
18. A large number of new product ideas have been made possible through technological breakthroughs in this industry	0.83	0.74			

Notes: a. Principal components factor analysis with varimax rotation; b. AVE, average variance extracted; c. CR, composite reliabilities; K-M-O Measure of Sampling Adequacy = 0.801; Barlett's Test of Sphericity = 2502.302; $P < 0.001$.

4.5 Adequacy of Measures: Reliability, Validity, and Common method variance

We take several steps to assess the construct reliability and validity of all measures. As noted earlier, we pre-tested the survey with 14 founding members and top executives of 12 high-technology SMEs. In the questionnaire itself, previously validated measurement items are used to help ensure construct validity. Following the guidelines outlined by Anderson and Gerbing (1988) we first assess the reliability of the multi-item constructs with Cronbach's alpha. As shown in Table 4.2, the Cronbach's alpha for all scales are greater than the recommended threshold of 0.70 and the composite reliability of each construct were all above the generally recommended threshold of 0.70, indicating that the items of each construct are internally consistent and the scales are deemed reliable for further data analysis (Nunnally, 1978). Furthermore, as shown in Table 4.2, the KMO (0.801) and Barlett's test of sphericity (2502.302) are highly significant as well

(p < 0.001), suggesting that factor analysis is suitable for this data.

Next, using AMOS 19.0 with maximum likelihood estimation, confirmatory factor analysis (CFA) is performed in order to assess unidimensionality, convergent validity, and discriminant validity of the multi-item constructs (Joreskog and Sorbom, 1993). A five-factor measurement model is examined in which the indicators of the five constructs − new product performance, political networking, business networking, perceived industry growth, and technological turbulence are allowed to load only on their expected latent variables. It should be noted that the chi-square ($\chi2$) likelihood ratio test is very sensitive to the sample size as well as the number of items and constructs in the model (Zhao et al., 2011). Hence, $\chi2/df$ and other fit indexes are used in this study. Consistent with previous research, the recommended cutoff points are used. For instance, the threshold for $\chi2/df$ ratio should be less than 3.0 or less than 2.0 in

a more restrictive sense; Adjusted goodness-of-fit (AGFI) index should be over 0.8; Values of goodness-of-fit index (GFI), comparative fit index (CFI), incremental fit index (IFI), and Tucker-Lewis coefficient index (TLI) should be over 0.90 (Bentler and Bonnett, 1980; Hu and Bentler, 1999; Kelloway, 1998). Root mean square error of approximation (RMSEA) value should be less than or equal to 0.08 to indicate a reasonable fit of the model (Browne and Cudeck, 1993).

The results of a confirmatory factor analysis (CFA) indicate that the hypothetical model fits the data reasonably well (χ^2= 335.37, p= 0.00, χ^2/df = 2.68, GFI = 0.88, AGFI = 0.83, CFI = 0.91, IFI = 0.91, TLI = 0.89, and RMSEA = 0.08), thereby confirming the unidimensionality of each construct in the model (Anderson and Gerbing, 1988; Bollen, 1989). Although the values of GFI and TLI are slightly lower than the recommended value of 0.90, they are close to 0.90 and are deemed as acceptable. As presented in Table 4.2, the standardised factor loadings of all items load significantly on their respective factors, with factor loading ranging from 0.58 to 0.92. All the average variance extracted (AVE) for the constructs in this study are above 0.5 which is the threshold recommended by Bagozzi and Yi (1988) and Fornell and Larcker (1981), thereby providing evidence of convergent validity.

As recommended by Fornell and Larcker (1981), discriminant validity is assessed by comparing the AVE of each construct with the variance shared between the constructs. Table 4.3 consists of the square roots of the AVE for each individual latent variable along the diagonal and correlation coefficients in the off-diagonal elements. The discriminant validity of a construct is adequate when the diagonal element is larger than each of the off-diagonal elements in the corresponding rows and columns. As shown in Table 4.3, the results satisfy those requirements. Thus, the results indicate that all shared

variances are less than the AVEs, confirming a sufficient discriminant validity of all the constructs used in this study.

Since this study employs cross-sectional survey data and a single respondent from each firm, the data may introduce the potential of common method variance (Podsakoff, MacKenzie, Lee, and Podsakoff, 2003). Scholars recommend using both procedural and statistical methods to minimise the bias (Podsakoff et al., 2003). Regarding procedural methods, the respondents are assured of the confidentiality and anonymity to reduce their evaluation apprehension and 'make them less likely to edit their responses to be more socially desirable, lenient, acquiescent, and consistent with how they think the researcher wants them to respond' (Podsakoff et al., 2003:888). Regarding statistical techniques, this study uses Harman's single factor test to check for the presence of the common method bias (Podsakoff and Organ, 1986). The analysis resulted in five factors with eigenvalues greater than 1.0, with the first factor accounting for about 31% of the total variance. All factor loadings are above 0.40, a common threshold for acceptance. Following Podsakoff et al. (2003) and Zhang and Li (2010), this study employs the latent variable approach by which the items are allowed to load on their theoretical constructs as well as on a latent common methods variance factor. Then the significance of the structural parameters both with and without the latent common methods variance factor in the measurement model is examined. The results indicate that all significant relationships are held after controlling for latent common methods variance factor and provide evidence that common method variance is not an issue in this study.

4.6 Data analysis and Results

Table 4.3 presents means, standard deviations, correlations, and square roots of the average variance extracted (AVE) values. Table 4.4 presents the results of hierarchical multiple regressions. Model 1 includes only control variables. Model 2 includes the

main effects of political networking and business networking, as well as the moderating variable: perceived industry growth. Model 3 includes the interaction terms. The variance inflation factors (VIFs) associated with each of the regression coefficients are within the range of 1.13 - 1.74, which are well within the cutoff value of 10, a common threshold for acceptance, so multicollinearity is not a serious problem (Neter et al., 1985).

Table 4.3 Descriptive Statistics

Variables	Mean	S.D.	1	2	3	4	5	6	7	8
1. Firm size	5.28	0.91	-							
2. Firm ownership	0.73	0.44	-0.10a	-						
3. Firm age	11.98	4.49	0.29c	-0.09	-					
4. Technological turbulence	3.68	0.87	0.13b	-0.05	-0.09	**0.81**				
5. Political networking	3.23	1.05	0.23c	0.08	-0.02	0.11a	**0.79**			
6. Business networking	3.58	0.82	0.09	-0.08	-0.03	0.37c	0.37c	**0.72**		
7. Perceived industry growth	3.55	0.86	-0.03	-0.04	-0.07	0.39c	0.17c	0.34c	**0.81**	
8. New product performance	3.38	0.66	0.18c	0.18c	-0.01	0.14b	0.44c	0.31c	0.18c	**0.77**

Note: N= 260

a $P < 0.1$ b $P < 0.05$ c $P < 0.01$ (two tailed)

Diagonal elements (in bold) are square roots of the average variance extracted (AVE) values and off-diagonal numbers are correlations between variables in this study.

Table 4.4 Results of Multiple Regression Analysis (N=260)

	Model 1		Model 2		Model 3	
	β	Std error	β	Std error	β	Std error
Constant	-1.161***	0.395	-0.735**	0.372	-0.674*	0.371
Controls						
Firm size	0.180**	0.075	0.106	0.070	0.107	0.070
Ownership	0.305**	0.142	0.296**	0.131	0.246*	0.133
Firm age	-0.007	0.014	-0.002	0.013	-0.003	0.013
Technological turbulence	0.086	0.061	-0.006	0.062	0.003	0.062
Electronics and information technology industry	0.140	0.158	-0.055	0.148	-0.064	0.147
Bio-engineering and new medical technology industry	0.423**	0.183	0.238	0.170	0.255	0.172
Advanced manufacturing technology industry	-0.259	0.179	-0.249	0.164	-0.229	0.164
Predictors						
H1: Political networking			0.318***	0.062	0.282***	0.064
H2: Business networking			0.149**	0.063	0.170***	0.064
Perceived industry growth			0.076	0.061	0.056	0.063
Interactions						
H3: Political networking × Perceived industry growth					0.095*	0.056
H4: Business networking × Perceived industry growth					-0.100*	0.055
F value	5.611***		9.944***		8.768***	
R^2	0.135		0.285		0.299	
Adjusted R^2	0.111		0.257		0.265	
ΔR^2	-		0.150***		0.014*	

Notes: ***P<0.01, **p<0.05, *p<0.1. Unstandardized coefficients reported

All hypotheses are tested based on Model 3, which has the full model specification. Hypothesis 1, proposing that political networking will be positively related to high-technology SMEs new product performance, is strongly supported ($\beta = 0.28$, $p < 0.01$). Hypothesis 2 pertains to the effects of business networking on the firm's new product performance. As shown in Table 4.4, business networking is positively related to high-technology SMEs new product performance ($\beta = 0.17$, $p < 0.01$). H2 is strongly supported.

Hypothesis 3 predicts that the positive relationship between political networking and high-technology SMEs new product performance will be stronger when perceived industry growth is higher. This hypothesis is supported because the coefficient for the interaction of political networking and perceived industry growth is significant ($\beta = 0.10$, $p < 0.1$). To facilitate interpretation of these findings, this study plots this moderating effect in Figure 4.2 by following the procedure suggested by Aiken and West (1991). The moderator perceived industry growth took the values of one standard deviation below and above the mean. The interaction effect illustrated in Figure 4.2 illustrates that the relationship between political networking and new product performance is moderated by perceived industry growth. Consistent with H3, it suggests that, for high-technology SMEs, the influence of political networking on new product performance would be greater in a higher growing industry than a lower one.

Hypothesis 4 postulates that positive relationship between business networking and high-technology SMEs new product performance will be stronger as perceived industry growth is higher. The coefficient for the interaction of business networking and perceived industry growth is significant ($p < 0.1$), however, it is negative ($\beta = -0.11$). Thus, Hypothesis 4 is rejected. The result indicates that perceived industry growth negatively moderates the relationship between managers' business networking and new

product performance in Chinese high-technology SMEs. Following a similar procedure as described above, the moderating effects of perceived industry growth on the relationship between business networking and new product performance are depicted in Figure 4.3. As shown in Figure 4.3, the positive relationship between business networking and new product performance is stronger when the level of perceived industry growth is lower, providing further evidence for rejecting H4.

The results in Table 4.4 also shows that firm size and firm ownership have significant effects on firm's new product performance in Model 1. Filatotchev et al. (2011) suggest that large firms are capable of commercialising their innovation and achieving high new product sales. Hence, large firms are more likely to have better new product performance. Furthermore, compared with state-owned enterprises (SOEs) or other collectively owned enterprises, privately owned enterprises tend to perform better in terms of new product performance. The results are consistent with previous research (Zhang et al., 2009).

In addition, our result indicates that bio-engineering and new medical technology industry has a positive impact on new product performance in Chinese high-technology SMEs. It suggests that SMEs in bio-engineering and new medical technology industry perform better than other industry sectors with respect to new product performance. Further, previous studies argue that the pattern of inter-firm collaboration in bio-technology industry might be more extensive than in any other industry, because the sources of expertise are widely spread (Powell, 1996; Powell and Brantley, 1992; Schweizer, 2005). It seems likely that the SMEs in bio-engineering and new medical technology industry are better able to use network ties to obtain the needed resources, thereby achieving better new product performance. The addition of the interaction terms

in Model 3 also increases the R-square compared with Model 2, in support of the significant moderating effects of perceived industry growth.
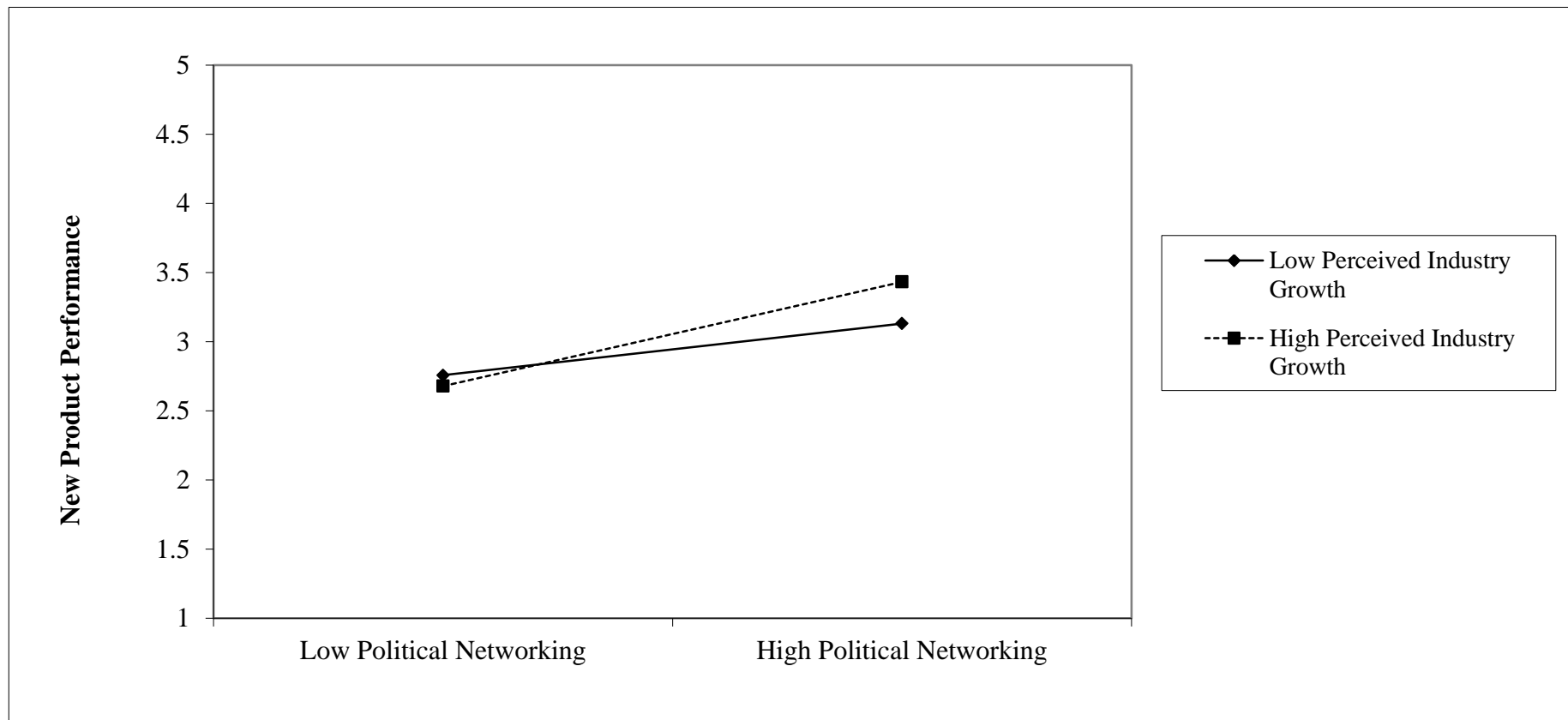
Figure 4.2 Political networking and new product performance – the moderating role of perceived industry growth
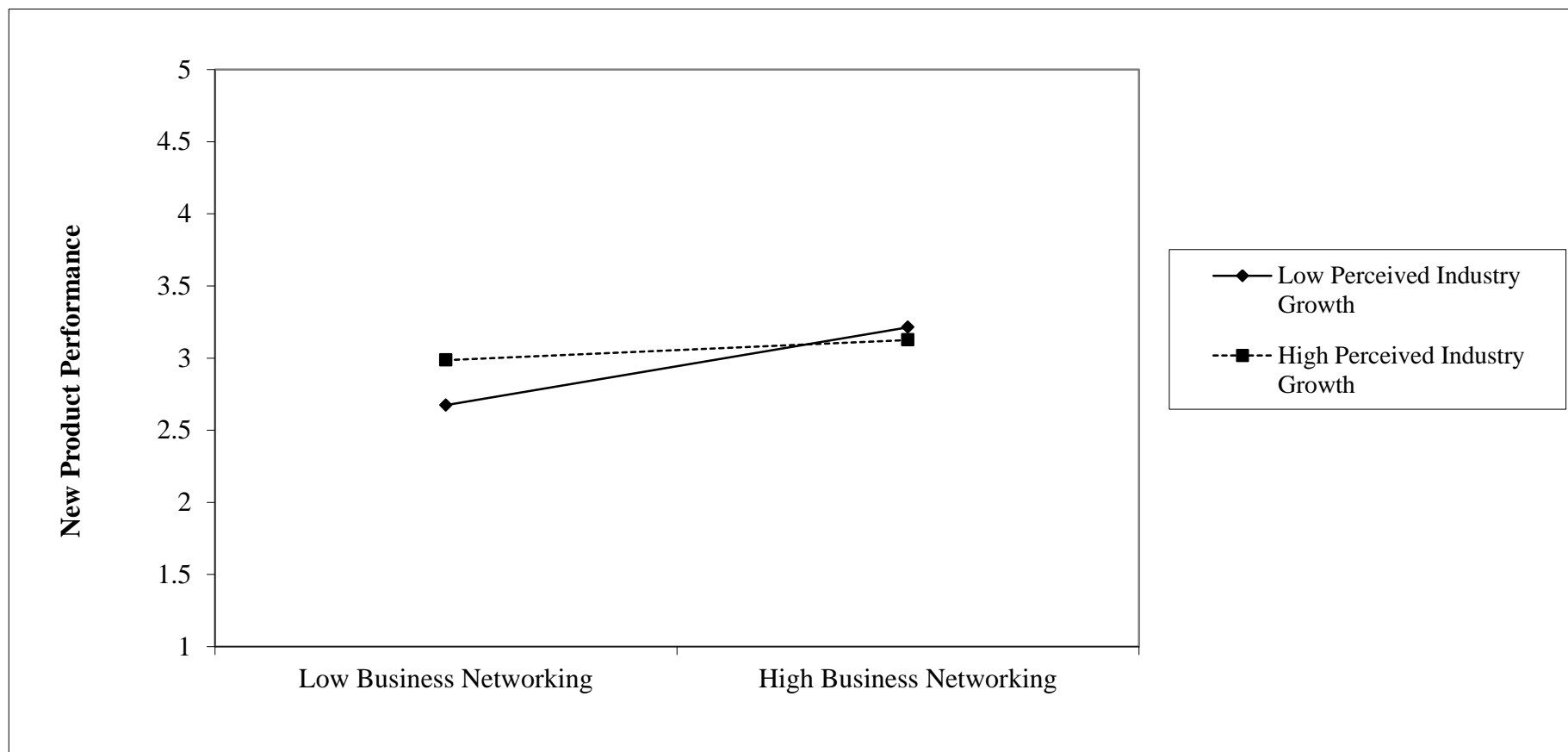
Figure 4.3 Business networking and new product performance – the moderating role of perceived industry growth

4.7 Discussion

Does managerial networking matter in high-technology SMEs' new product performance in emerging economies? With survey data obtained from a sample of SMEs in China's high-technology industries, this study examines simultaneously the roles of mangers' political networking and business networking in new product performance.

Previous studies suggest that political networking has a positive relationship with firm performance across different institutional contexts (Peng and Luo, 2000; Xin and Pearce, 1996). Following this line of research, this study extends the understanding of the networking-performance link by investigating the influence of political networking on firm's new product performance. The sample firms examined in this study are SMEs in high-technology industries, which have emerged along with China's economic transition and have been playing a significant role in developing and commercialising new technologies and products and in increasing levels of business activity and employment (Li and Zhang, 2007; Siu, et al., 2006). We find that political networking has a positive relationship with high-technology SMEs new product performance. While China's legal and political institutions have been improving with market liberation and economic reform, political networking, as opposed to existing research (e.g., Peng and Zhou, 2005; Sheng et al., 2011; Shu et al., 2012; Zeng et al., 2010), remains salient rather than declining in China's transition economy.

There are some possible explanations for the result. First, managers build good connections with government officials to help secure financial support. Due to the relatively high risk profile of high-technology SMEs, it is difficult for them to obtain banks loans and other external financing from formal capital markets (Siu et al., 2006; Zhu and Sanderson, 2009). Further, the related financial policies on technology

innovation and some regulatory measures, such as government subsidy and the preferential tax policy, to some extent, are more conducive to large enterprises or companies in capital intensive and labour-intensive sectors (Zeng et al., 2010). For example, for SMEs in information technology sector with high labour costs, the value-added tax (VAT) system in China demotivates innovation because it is based on production (Zhu et al., 2012). Since 1980s, China's government have initiated a series of programmes, such as Key Technology R&D Programme, the 863 Programme and 973 Programme, to fund and support R&D activities. However, only a small proportion of high-technology SMEs with technological advantages have gained the benefits from those programmes. In addition, it can be argued that Chinese government special funds for high-technology SMEs, such as Innovation Fund for Small Technology-based Firms, are in favour of firms that have contacts with government officials and agencies.

Secondly, as government still maintained control over the key resources in developing high-technology industries in China, managers cultivate good relationships with government officials to obtain information about possible changes in government policies, market and technology trends, as well as to help them seize possible business opportunities (Davies et al., 1995; Li, 2005). During China's economic transition, officials at various level of the government have the power to approve/disapprove projects, allocate/reallocate scarce resources, and erect/remove entry barriers (Peng and Luo, 2001). As a result, the managers in high-technology SMEs naturally maintain some contacts with government officials. Previous studies argue that government-controlled resources obtained from political networking are not directly linked to technological capability and therefore cannot help firms deal with technological turbulence (Sheng et al., 2012). However, for many high-technology SMEs in China, their innovation activities are closely related to the relationship with governments. In our study, as mentioned by some senior managers, it would be much quicker and easier

for high-technology SMEs to update technologies and products by participating in some scientific and technical projects, such as the 863 Programme and Torch Programme. The government-sponsored R&D programmes can provide public subsidies and allow indirectly the firm either to open up a new research project or to expand an existing one (Matt and Wolff, 2004). Further, these R&D programmes, to some extent, determine the trend of technology development at the industry level. For Chinese high-technology SMEs with limited resources, they can ill afford to fail in any of R&D investment in a turbulent environment. It can be argued that knowing the future development of new technology could offer high-technology SMEs possible business opportunities. Moreover, it is likely that those R&D programmes offer high-technology SMEs easier access to R&D laboratories, and hence can help SMEs overcome technological barriers.

Finally, given the weak institutional arrangements in China, cultivating political connections helps high-technology SMEs to seek protection in situations of uncertainty (Li and Atuahene-Gima, 2001). Prior research has noted that managers should counteract their formal structural disadvantages and defend themselves against threats like appropriation or extortion by building good connections with government officials in transition economies such as China (Xin and Pearce, 1996). In particular, because of weak property rights protection, firms engage in widespread opportunistic and unlawful behaviour (Nee, 1992; Peng and Heath, 1996). For instance, the piracy problem in China has provoked much dispute between Chinese and its western counterparts, particularly between China and USA (Huang et al., 2004). The intellectual property rights of SMEs in high-technology industries resulting from product innovation may go unprotected, making production innovation a highly risky and less profitable strategy (Li and Atuahene-Gima, 2001). Although Chinese domestic enterprises have realised the value of protection of intellectual property and firm assets, legal enforcement in China is still spotty and subject to alliances with powerful individuals and organisations,

particularly in certain localities in China (Ahlstrom and Bruton, 2002). As expected, this study confirms that managers build good connections with government officials to help safeguard intellectual assets and even secure protection from criminal interference in the context of high-technology SMEs in China's transition economy.

Equally noteworthy is the finding that business networking significantly enhances new product performance in high-technology SMEs in China. A rapidly changing technological environment and fiercely intense competition in China propel domestic firms to update their technologies and products to maintain their competitive position (Sheng et al., 2011). Under such an environment condition, firms have a greater need to build linkages with various players in the market in order to acquire information, reduce competitive uncertainty, and lower risk (Ang, 2008; Uzzi, 1997). As regards innovation, building collaborations with different business partners can help facilitate the acquisition, transfer and use of updated technology (Ahuja, 2000). Further, connections with other firms that have developed advanced technologies can enable firms to enjoy economies of scale in R&D investment, because this collaboration can help the firms overcome the resource constraints and time compression diseconomy entailed by internal development (Wu, 2012). Hence, in line with Uzzi (1997), business networking can enhance a firm's response to the ever-changing technology and help it quickly capitalise on emerging market opportunities. To be precise, managers of high-technology SMEs collaborate with buyer firms or customers to gain market knowledge, which in turn can be integrated into the firm's innovation process. An accurate understanding of clients' preferences, latent needs and responses to existing products can be regarded as important source of new ideas for developing new products. Moreover, by closely interacting with key customers, high-technology SMEs are able to discover new opportunities in their niche market.

Prior research argues that business networking with suppliers will enable firms to reduce the risks and lead times of product development, while enhancing the quality of the new products and market adaptability (Chung and Kim, 2003). In particular, suppliers are valuable sources of information for developing new products or improving existing products in the market (Zeng et al., 2010). For Chinese high-technology SMEs with limited resources, collaborating with suppliers may enable them to quickly respond to market demands and changes. Further, working with suppliers can help high-technology SMEs to incorporate suppliers' expertise and knowledge into the product development produces, thereby leading to stronger new product performance.

With regard to competitors, firms generally build connection with them in order to carry out basic research and establish standards for technological innovation (Tether, 2002). It seems that firms with significant in-house R&D are less likely to collaborate with their competitors for developing innovative products in order to reduce the risk of knowledge leakage (Hamel et al., 1989). However, it should be noted that Chinese high-technology SMEs are, in general, located in science parks or industry clusters, thereby collaboration with competitors resided in the same cluster can be considered a fast and low-cost route to get access to new technological and marketing knowledge. Further, SMEs involved in a cooperative agreement with their competitors can encourage mutual learning behaviours, producing a synergistic effect on common technical problems. In order to respond quickly to market change, Chinese high-technology SMEs also can apply the new knowledge to modify existing products by collaborating with competitors.

In respect of other business intermediaries, such as technology intermediaries, business incubators, logistics agencies, and professional service providers, firms build the close network and cooperation with those intermediary organisations to obtain information for technological innovation, and hence can lead to better new product performance.

This result is consistent with McEvily and Zaheer's (1999) finding that firms built connections with regional institutions, such as regional industrial extension centres in a cluster to acquire competitive resources and capabilities. Further, as noted by Zhang and Li (2010), while linkage with prominent organisations such as established firms may enable ventures to access their resources, connection with business intermediaries enable ventures broaden their external innovation search scope without involving too much search cost. Thus, building collaborations with other business intermediaries can offer Chinese high-technology SMEs information resources and reciprocal supports, which is imperative in a market featured with high velocity, dynamism and vibrancy (Luo et al., 2012).

Prior research has noted that during the social and economic transition, a firm's strategic posture often lies in its external environment (Atuahene-Gima and Li, 2004; Luo and Park, 2001; Tan and Litschert, 1994). In this study, we examine the moderating role of perceived industry growth in the relationship between managerial networking and new product performance. It seems that high growth industries provide a safe setting for business operations due to the overall level of munificence and richness in investment and marketing opportunities (Covin and Slevin, 1989). Generally, managers in a sluggish industry need managerial networking to attenuate market fluctuations whereas those in a fast-growing industry need networking not only to reduce such threats but also to gain from market opportunities (Luo, 2003).

Our result indicates that perceived industry growth has a positive but marginal moderating effect on the relationship between political networking and high-technology SMEs new product performance, such that the relationship between political networking and new product performance becomes more positive as perceived industry growth is higher. A possible explanation is that SMEs in booming industries may depend more on

111

the connection with government in order to expedite acquiring the needed resources, given the considerable power possessed by government officials in developing high-technology industries in China. Further, as Sheng et al. (2011) posit, the contingent relationship can be attributed to variance in local institutional environments across regions in China. For instance, the sample firms in previous studies are mainly from the most developed areas in China, such as Beijing, Shanghai or Guangdong where the legal enforcement is relatively efficient. Nevertheless, this study goes beyond those regions and provides a broader range of local environments affecting high-technology SMEs innovation. Relative to their counterparts in more developed regions in China, high-technology SMEs in our sample may confront more difficulties that prevent them from unleashing the innovation potential because of the relatively weak institutional support (Zhu et al., 2012). Under such conditions, high-technology SMEs may use their managers' political networking to take advantage of fast-growing industry in China's emerging market.

It should be noted that industry growth exerts a weak influence on the performance implication of political networking in high-technology SMEs in China. In a prosperous industry, it can be argued that the resources required by the firm are generally available and the business opportunites are relatively abundant in a market. As a result, SMEs may be able to develop some capabilities needed to run businesses in a growing market by their own, and reduce their dependence on the government for dispatching needed resources (Luo, 2003). As Su, Xie, and Wang (2003) argue, China's institutional transitions may have decreased the benefit of network ties with the government. Though the positive moderating effect of industry growth upon the relationship between political networking and new product performance is found in this study, it cautions us that with the reformation of economic systems, the role of political networking in Chinese SMEs new product performance may be gradually diminishing.

Eisenhardt and Schoonhoven (1996) find that munificent market conditions are related negatively to alliance formation with different business partners. In line with this argument, our finding suggests that the positive relationship between business networking and high-technology SMEs new product performance will be marginally weaker when the perceived industry growth is higher. A plausible explanation for this finding is that high-technology SMEs in our sample may be struggling to leverage the benefits of such business linkages despite facing the benign environment featured with tremendous growth opportunities. High-technology industries are characterised by a rapid rate of technological change, which makes existing technological advantage quickly obsolete (Wu, 2012). In particular, when perceived industry growth is high, it seems that the industry resides in a very early phase of an industry life cycle (Zhang and Li, 2010). Under such circumstance, SMEs managers tend to use 'wait and see' approach to deal with direction and option of new product development, which may further discourage SMEs to engage in building cooperation networks with other parties. Business connections may be slow to reach their potential and so less attractive in high growth market where speed is paramount (Eisenhardt, 1989). When the perceived industry growth is high, high-technology SMEs managers tend to believe that there exists a relatively wide range of opportunities and options that their firms can pursue for product innovation, thus, they will devote more resources to conducting R&D activities internally rather than cooperating with other firms. Under such a circumstance, SMEs managers must endeavour to minimise the information that flows out of the firm in order to prevent diverting scarce resources and attention away from its innovation process. Therefore, coupled with Li and Atuahene-Gima's research (2002), our finding suggests that, when the perceived industry growth is high, Chinese high-technology SMEs in our sample may be not tapping all the available opportunities for innovation success through business networking formation.

4.8 Managerial Implications

The findings from our study have implications for practitioners and policy makers. Practitioners such as managers in SMEs have long been advised to compensate their liabilities of smallness and newness in transition economies through establishing external connections with both government officials and business partner. Our study highlights the important role of managerial networking in enhancing high-technology SMEs new product performance. Managerial networking may substitute institutional voids and present a viable strategy to access external information, knowledge, and opportunities that are unavailable internally. Building political and business connections in transition economies can contribute to high-technology SMEs' product innovation, thereby enhancing new product performance. Our findings also demonstrate that the different types of networks have different impacts on SMEs new product performance when considering the moderating effect of the perceived industry growth. In high growth industries, managers in high-technology SMEs should build close multiple political connections in order to secure scarce resources. Nevertheless, our results suggest that high-technology SMEs managers should learn how to leverage their business networks for the purpose of innovation in high growth industries. For example, although there may be many opportunities in higher growth industries, not all high-technology SMEs can benefit from cooperating with external business partners. This study also offers valuable implications for policy makers. Our findings confirm that political networking plays a significant role in new product performance for SMEs in high-technology industries. Arguably, the prevalence of political networking in practice demonstrated that government officials still intervene in firms' business operations and market development. The ultimate goal of China's reform is to deregulate its economy and establish a free and open market system (Sheng et al., 2011). Therefore, policy makers should try to create effective institutional arrangements or policies to constrain

the political intervention on business organisations. Further, policy makers should try to establish a stable platform to facilitate a wide range of cooperation networks for high-technology SMEs in high growth industries.

4.9 Limitations and Further Research

This study has several limitations that should be addressed in future research. First, the cross-sectional data used in the study may limit the tests of causal relationships among the variables. For instance, as mentioned previously, although our results suggest that both political and business networking are positively related to high-technology SMEs new product performance, it is also possible that better new product performance may be a prerequisite of building any types of networks. Thus, a longitudinal study will be a valuable approach for establishing causal relationships (Kenny, 1979). In addition, our study offers only limited insights into the complex role of networking formulation in high-technology SMEs' innovation and performance in a transition environment. It may be necessary for future research to use qualitative methods to help researchers gain a deeper understanding of how different types of managerial networking impact on SMEs' product innovation processes and outcomes in various market and institutional conditions.

Second, the constructs in the study are measured by using perceptual self-reports. For example, it has been observed that managers in Chinese SMEs in general are generally reticent to disclose their financial performance and report details on assets as well as profitability. Thus, our study is constrained by the lack of detailed firm-level financial data. As Li and Atuahene-Gima (2002) suggest, it is likely that using retrospective data will pose such potential problems as limited recall of the respondents and biased perceptions of past realities. Future research may enrich financial measurements of new product performance, such as absolute value of new product sales.

Finally, our sample is limited to high-technology SMEs in China. Despite emerging economies share some common features in their market and institutional environments, they differ significantly in the stages of their economic and institutional development, as well as in cultural contexts (Sheng et al., 2011). It should be cautious to generalise the results of this study to other emerging economies. In particular, future research may investigate how social networks help firms overcome market and institutional hurdles in other emerging market contexts, such as Russia, India, and Brazil. Further, future research may provide comparative evidence to examine and document the relationship among strategic choices, external environment, and their performance in transition economies.

Chapter 5

The Export Performance of High-Technology SMEs in Emerging Markets: The Effects of Firm Resources and Institutional Support

5.1 Introduction

The prominence of firm internationalisation has captured the interest of scholars in strategic management, international business and entrepreneurship (Lu and Beasmish, 2001). As Mathews (2006: p16) defines, internationalisation can be 'the process of the firm's becoming integrated in international economic activities'. Whereas most research on internationalisation strategy has focused on multinational enterprises (MNEs), there is a growing recognition that growth by internationalisation is an important strategic option for small and medium-sized enterprises (SMEs) (e.g., Autio, Sapienza and Almeida, 2000; Lu and Beamish, 2001; Oviatt and McDougall, 1994). Arguably, SMEs may not make the effort, or are afraid of tackling international markets because of their poor control over these activities, mainly as a result of a lack of resources, such as knowledge and foreign market information (Julien and Ramangalahy, 2003). However, as observed today, new and small firms tend to capitalise on internationalisation (such as market seeking or foreign resource acquisition) to access and exploit the vast global business opportunities that were previously capitalised almost exclusively by large, well-established firms (Zhou, Wu and Luo, 2007).

It has been noted that more and more SMEs, especially those that are technologically driven, engage in international activities during the early stages in their organisational development. These firms are often referred to in the literature as 'born global' firms or as 'international new ventures' (Knight and Cavusgil, 2004; Oviatt and McDougall,

1994; Zahra, Ireland and Hitt, 2000). The inability of traditional internationalisation theories to explain why some private and small businesses internationalise from the outset has been highlighted inn the emerging international entrepreneurship theory (Oviatt and McDougall, 2005; Robson et al., 2012). The internationalisation of entrepreneurial SMEs can be expected to gain further momentum because of the continued opening of international markets and the facilitation of international transactions by new technologies (Hitt, Ireland, Camp and Sexton, 2001; Knight and Cavusgil, 2004).

Exporting, as compared with other modes of foreign market entry, is the quickest way for small firms to penetrate foreign markets and engage in internationalisation (Johanson and Vahlne, 1977; Jones, 2001). In general, exporting requires fewer organisational resources, provides greater flexibility for managerial actions, and involves lower business risks (Leonidou, Katsikeas, Palihawadana and Spyropoulou, 2007). A review of the extant literature shows that there have been many empirical studies conducted on the determinants of internationalisation of SMEs and the performance implications of such behaviours by using the developed nation context (Filatotchev, Dyomina, Wright and Buck, 2001; Fernandez and Nieto, 2006; Westhead, Wright and Ucbasaran, 2001; for a review, see Ruzzier, Hisrich and Antoncic, 2006; Sousa, Martinez-Lopez and Coelho, 2008; Zou and Stan, 1998). For instance, Ruzzier et al. (2006) developed an integrative model of export performance originally proposed by Antoncic and Hisrich (2000) by including entrepreneur's human and social capital, firm characteristics (such as number of employees and sales), as well as environmental characteristics. Furthermore, in accordance with Zou and Stan (1998), Sousa et al. (2008) conducted a review of the empirical literature on export performance by examining both internal and external determinants of export performance. Specifically, they have investigated internal factors including export marketing strategy, firm

attributes and management characteristics, whereas external factors focusing on foreign and domestic market characteristics.

Although studies that have examined export performance are abundant, much of knowledge regarding successful export performance of SMEs, to date, is fragmented, often resulting in mixed results, particularly among new technology-based ventures. For example, previous research on internationalising firms engaged in new technology-based sectors using mainly US context, contended that internationalisation was associated with superior profitability, market shares and sales growth (Bloodgood, Sapienza and Almeida, 1996; Buergel, Fier, Licht and Murray, 2002). More broadly based, studies from outside the US (e.g., Europe and Japan) have suggested weaker results, as far as the link between internationalisation and firm performance is concerned (Lu and Beamish, 2001; Westhead et al., 2001). These inconsistent findings represent a challenging and interesting question because internationalisation of new and small firms is a complex phenomenon that may involve such the characteristics as individual entrepreneurs and the role of institutional environment. As more high-technology SMEs from emerging markets such as China enter into foreign markets and establish the global presences, theoretical explanations of such recent phenomenon still remain limited (Aulakh, Kotabe and Teegen, 2000; Brouthers and Xu, 2002; Wright, Filatotchev, Hoskisson and Peng, 2005; Yamakawa, Peng and Deeds, 2008). Hence inquiry into the matter of whether the existing conceptualisation and frameworks can be applied to technology-based SMEs in emerging economies is much needed.

Previous research has asserted that a key variable in small business internationalisation is the entrepreneur of the firm (Westhead et al., 2001). The entrepreneur's experiences and skills are generally regarded as important factors influencing business survival and development (Storey, 1994). However, in emerging economies, where entrepreneurs

often have little experience of the mechanisms of market economies, those able to acquire knowledge and networks necessary for the exploration of opportunities in foreign markets are likely to be more internationally oriented (Filatotechev, Liu, Buck and Wright, 2009).Whereas traditional international trade scholars assumed that labour is immobile across national borders, a new phenomenon has appeared: inward human mobility, specifically returnees, defined here as scientists and engineers, or students who have studied or trained in the USA or other Organisation for Economic Co-operation and Development (OECD) countries, and have returned to their native countries to become returning entrepreneurs by setting up new ventures (Liu, Lu, Filatotchev, Buck and Wright, 2010). It is argued that immigrant entrepreneurs have become a major source of globalisation, and it is widely recognised that these returning entrepreneurs make a valuable economic, political, social and cultural contribution to the societies they have returned to (Gao, Liu and Zou, 2013). As Filatotchev et al. (2009) suggest, the growing mobility of scientists and entrepreneurs represents a new channel for international knowledge transfer, parallel with foreign direct investment (FDI) and international trade. There is, however, little empirical evidence to show how special human capital and social capital of these returnees may affect the internationalisation of SMEs in high-technology industry from emerging markets. As Saxenian (2006) contends, since few managers from emerging markets and transition economies were exposed to international markets, the expertise of returning entrepreneurs may be relevant, replacing a *'brain drain'* with *'brain circulation'*. Hence these returning entrepreneurs may be central in resolving a deficit of entrepreneurship and in stimulating the internationalisation of SMEs that are technology driven in emerging markets (Tan, 2006).

In addition to this lack of awareness of returning entrepreneurs, the majority of previous studies on the internationalisation of SMEs have treated institutional factor as

background (Peng, Wang and Jiang, 2008). This may represent a research gap, as institutions in emerging markets differ drastically from those in market economies (Meyer and Peng, 2005; Shenkar, 2005). The role of institutions is more salient in emerging and transitional markets because the rules are being fundamentally and comprehensively changed, and the scope and pace of institutional transitions are unprecedented (Peng, 2003). Furthermore, it seems that the emergent literature emphasizes that institutions shape the internationalisation decisions and behaviours for firms from emerging markets (Child and Rodrigues, 2005; Peng, 2003), however, this proposition needs more empirical supports. Hence, as institutions in emerging economies significantly shape the export strategies and performances of SMEs in high-technology industry, including home institutional environments in examining the determinants of export performance has the potential to enhance our understanding of internationalisation.

We argue that this study contributes to the existing literature in a number of ways. First, this research helps to improve our understanding of the internationalisation of technology-based SMEs in an emerging market context. It fills a research gap in existing studies that have taken the shift from developed economies to emerging economies such as China. In response to a recent call for understanding the determinants of internationalisation of entrepreneurial firms from emerging markets (Luo and Tung, 2007; Mathews, 2006; Yamakawa et al., 2008), this paper adds empirical evidence by examining both internal and external factors that affect the export performance of SMEs in high-technology industry in China. Second, this study also supports the recent recognition of the new phenomenon that the role of mobile international talents as represented by returnee entrepreneurs will be crucial for understanding the internationalisation of small entrepreneurial firms in emerging economies. In addition, by taking institutional factor (e.g., institutional support) into

consideration, this study helps probe deep into the institution-based view of international business strategy in emerging economies.

As the international success or failure of entrepreneurial firms represents one of 'the big questions in IB research' (Eden, 2008:2), we believe that a combination of the unique human and social capital of entrepreneurs and institutional factors can be a new research agenda. Our main argument is the export performance of high-technology SMEs in emerging economies depends not only on entrepreneur-specific factors such as returnee identity, international experience, global networks and inward internationalisation orientation, but also on the institutional environment of the home country. This is of relevance to other emerging and transitional economies, particularly countries with large groups of returnees, such as India and, arguably, Russia (Filatotchev et al., 2009). Moreover, the concept of returning entrepreneurs represent a new channel to transfer knowledge cross the border, it can contribute to a better understanding of 'the integration into the global economy of emerging and transition economies, particularly from Asia' (Eden, 2008:1). Therefore, the research here provides a more comprehensive view of the internationalisation of high-technology SMEs in the context of emerging economies.

The remainder of this paper is organised as follows: First we discuss theoretical background and develop hypotheses. Next we describe research context and variable measurements. Then we present the empirical results. Finally we discuss the research findings and their implications, followed by the conclusion.

5.2 Theory and Hypotheses

5.2.1 The Resource-based view and Internationalisation from Emerging Economies

The mainstream perspective within international business argues that the definable competitive advantages are central in explaining why firms internationalise, and that internationalisation stems from firm-specific ownership advantages (Caves, 1971; Dunning, 1993; Peng, 2001). The resource-based view (RBV) is compatible with mainstream conceptualisations of internationalisation, as ownership advantages are conceptually similar to the firm's value-generating resources (Dunning, 1993; Wang et al., 2012). The RBV regards the firm as a bundle of resources and suggests that their attributes significantly affect the firm's competitive advantage and, by implication, its subsequent performance (Barney, 1991; Penrose, 1959; Wernerfelt, 1984). The RBV posits that firm-specific resources that are rare, valuable, inimitable and non-substitutable represent the main source of competitive advantage for internationalisation (Barney, 1991; Brouthers and Hennart, 2007; Zou, Fang and Zhao, 2003). The resources already possessed by the firm can be deployed in multiple markets, helping the firm balance the costs and risks incurred overseas due to managerial complexity and liability of foreignness, and achieve economies of scale, scope and production rationalisation (Wang et al., 2012). As Peng (2001) contends, the resource-based view has become an influential theoretical perspective in international business research, especially in the development of new theories of internationalisation.

The RBV has recently been used to identify the range of factors that affect the internationalisation of SMEs in both developed and emerging markets (Lee et al., 2001; Lu and Beamish, 2001; Lu et al., 2010; Westhead et al., 2001; Yiu et al., 2007). In many new SMEs, owners or entrepreneurs are a key resource for firm internationalisation (Westhead et al., 2001). The entrepreneur can accumulate both human capital and social

capital, leading to industry and management know-how, in both domestic and international markets (Brush, Edelman and Manolova, 2002). More importantly, the resources and capabilities mobilised by an entrepreneur have an important impact on the ability to enter export markets (Westhead et al., 2001). As Bloodgood et al. (1996) assert, firms with accumulated resources may have a greater proclivity towards internationalisation. Given that internationalisation is certainly an act of entrepreneurship (Yamakawa et al., 2008), the human capital and social capital of entrepreneurs that are based on their knowledge, experiences and networks may significantly affect SMEs' internationalisation and their subsequent performance. Therefore, in accordance with RBV, this study proposes that the internationalisation process of SMEs, especially those that are in high-technology industry in emerging markets, is driven by their entrepreneurs and managers' knowledge, experience, inward internationalisation orientation and international networks.

Returnees and Exporting

Human resources – the pool of human capital under the firm's control - are regarded as an important driver of internationalisation, as it is seemingly impossible to separate knowledge from those who possess it, and people involved in the firm are playing increasingly important role in underpinning internationalisation process (Li, Zhang and Lyles, 2013; Liu et al., 2010; Paul et al., 2012; Wang et al., 2012; Wright et al., 1994). Human capital stresses that knowledge increases individuals in their cognitive abilities, leading to more productive and efficient activity (Davidsson and Honig, 2003). Once engaged in the entrepreneurial process, individuals with more or higher quality human capital should arguably have superior ability to successfully exploit opportunities (Davidsson and Honig, 2003).

Within this context, returnees may have specific, idiosyncratic human capital that associated with a spectrum of skills and knowledge with varying degrees of transferability (Castanias and Helfat, 1992). Returnee entrepreneur's human capital associated with considerable specific industry know-how, comprehensive understanding of foreign culture, as well as valuable hands-on experience is important to the internationalisation of new and small firms. After years of living in overseas, returnees' sepcial experiences may shape the lens-like cognitive structures through which they see the whole world, and these cognitive structures (or mental model) enable entrepreneurs both to filter business opportunities and to interpret and construct meanings out of them, to cope with rapidly changing external environments and to make appropriate strategic responses (Filatotchev et al., 2009). Returning entrepreneurs may have acquired academic knowledge in the form of general education, scientific and technical training, and practical business skills (Liu et al., 2010). They may also leverage their knowledge and the social contacts generated through the previous education system to secure resources required to identify and exploit business opportunities (Wright, Liu, Buck and Filatotchev, 2008). For example, in China's Zhongguancun Science Park (ZSP), 38 percent of returnees have a PhD, 45 percent have a master's degree, and 57 percent already hold patents (Li et al., 2012). Further, returning entrepreneurs may have acquired practical business human capital from either working in a commercial environment or through having founded a business (Filatotchev, Liu, Lu and Wright, 2011).

It can be argued that a problem in emerging markets is a lack of general commercial knowledge about how to run a business in a market economy. However, previous knowledge and experience possessed by returnees may be transformed into valuable knowledge such as managerial experience, enhanced reputation, access to finance institutions and broader social connections, making returnees more inclined to recognise

and leverage international business opportunities (Filatotchev et al., 2009). This knowledge can enable returning entrepreneurs to apply the relationships and processes of technological entrepreneurship to a new institutional environment and build connections with foreign customers (Saxenian, 2006). Therefore, previous knowledge, experiences, problem-solving skills mobilised by a returning entrepreneur may underpin the process of the discovery and exploitation of opportunities in international market, predisposing entrepreneurs towards adoption of internationalisation and enhancement of its performance. Thus, we hypothesise:

H1: Export performance of high-technology SMEs in emerging markets is positively associated with the presence of returnee entrepreneur.

Entrepreneurs' MNEs Work Experience and Exporting

The previous arguments stress that technology-based SMEs in emerging economies develop their international activities by using returning entrepreneurs' knowledge and experiences. In addition, the internationalisation performance of SMEs may also be driven by the previous work experience of a founder. It should be noted that the past business experience of entrepreneurs represents an important organisational resource that may underpin the firm's internationalisation process (Reid, 1981). The level and breadth of prior work experience may help managers develop knowledge of the opportunities for expansion into new international markets and know of how to manage relationships and operations in the new environment (Hitt, Uhlenbruck and Shimizu, 2006). In particular, an entrepreneur's international business experience accumulated by working in an MNE may significantly affect indigenous SMEs' internationalisation process and outcome. As Inkpen and Tsang (2005) maintain, employees of MNEs who embody the firm-specific knowledge of the multinationals may act as a channel for export spillovers whereby technology, management skills and international marketing

techniques may be transferred to local companies through direct contact and labour mobility. Further, former employees of MNEs who then set up their own companies are likely to maintain cooperative connections with MNEs, stimulating internationalisation and underpinning export performance (Tan, 2006). Hence, we hypothesise:

H2: Export performance of high-technology SMEs in emerging markets is positively associated with the previous entrepreneurs' MNEs work experience.

Entrepreneurs' Inward Internationalisation Orientation and Exporting

In the new era of global competition, it can be argued that firms attain superior export performance because they are able to learn and to use this learning more efficiently than others (Sousa et al., 2008). An inward internationalisation orientation is associated with managerial vision, which may foster the firm's internationalisation performance through learning about or utilising foreign technologies, management skills and capital investment (Buckley et al., 2002; Welch and Luostarinen, 1993). It should be noted that many new international SMEs are knowledge-intensive firms, which may suffer from short organisational life, small size, resource constraints and the pressure to learn quickly to survive (Filatotchev et al., 2012; Zahra et al., 2000). Given that internationalisation is by nature a complex and high-risk investment, it is seemingly difficult for local SMEs, especially those that are technologically driven, to engage in international activities such as exporting without having sufficient knowledge and information. It has been proposed that inward internationalisation orientation may provide a good opportunity to learn about foreign trade techniques, foreign operation characteristics and ways of using different operation modes, and hence, diminishing perceived obstacles and generally lowering uncertainty about the later export move, through increased knowledge of and experience in international business (Karlsen et al., 2003; Korhonen et al., 1996; Welch and Luostarinen, 1993). As Wan and Hoskisson

(2003) claim, indigenous firms could overcome inadequacy in production capacity and lack of knowledge of international business through learning from more capable foreign partners. Therefore, with proper digestion and utilisation of complementary resources and capabilities introduced by foreign firms from more developed markets, local SMEs in high-technology industry are able to enhance their competitive advantages and improve their export performance (Zhou et al., 2007). Hence, we hypothesise:

H3: Export performance of high-technology SMEs in emerging markets is positively associated with inward internationalisation orientation.

Entrepreneurs' International Networks and Exporting

Entrepreneurs' social capital in the form of international networks may have an important impact on small firms' internationalisation behaviours, and thus, the export performances by providing access to information and resources not available internally (Adler and Kwon, 2002; Davidsson and Honig, 2003). Such global social networks can provide the focal SME with relevant information of foreign markets that can help discover more attractive opportunities and potential customers (Wright et al., 2008). In the course of internationalisation for SMEs from emerging markets, particularly in East Asia, the workings of international networks are seen to play an important role in contributing to performance outcomes such as export performance (e.g., Dai and Liu, 2009; Lee et al., 2001; Lu et al., 2010; Zhou et al., 2007). These studies treat international social networks as a unique type of resource because they represent a web of personal connections and relationships for the purpose of securing supports externally as well as building the firm's reputation and the trust from partner organisations (Lu et al., 2010; Zhou et al., 2007).

Young and smaller technology ventures in emerging economies such as China may have the liabilities of foreignness and newness when they enter into foreign markets.

Hence, internationalising SMEs often have to proactively build relational linkages with foreign partners to mitigate their liabilities and mobilise network resources to create new capabilities that can contribute to their competitive advantage (Coviello and Cox, 2006). These relational linkages by nature are bonds similar to personal relations or commercial transactions that generate trust and mutual understandings, which underline inter-firm collaboration (Chen and Chen, 1998). The closer the relations that a high-technology SME can build with its international contacts, the more likely it is that the SME will have a better export performance. Hence, we hypothesise:

H4: Export performance of high-technology SMEs in emerging markets is positively associated with the presence of international networks.

5.2.2 Institution-based view and Internationalisation from Emerging Economies

Defined as "the rules of the game in a society" (North, 1990:3), institutions exhibit significant legitimacy pressures for firms, and fundamentally affect firms' strategic choices and performance consequences (Hoskisson, Eden, Lau and Wright, 2000; Peng, 2003; Peng et al., 2008; Scott, 1995; Wright et al., 2005). The influence of the institutional framework is not constrained to the domestic realm but can also play a salient role in the internationalisation of indigenous firms in emerging economies (Voss, Buckley and Cross, 2010).Institutions in the form of the judiciary and bureaucracy, government structures, and other market mechanism enablers determine the 'playing field' for firms and their incentive and reward systems by accidentally or intentionally creating market imperfections (North, 1990; Voss, Buckley and Cross, 2010). As the largest emerging economy, China has been evolving from a centrally planned to a market-based economy through liberalisation and privatisation, accompanied by institutional changes in political systems, legal frameworks, and market structures (Child and Tse, 2001). Further, as profound differences in institutional frameworks exist

between emerging and market economies, it is salient to incorporate the institutional environment when investigating firms' internationalisation in an emerging market such as China (Gao et al., 2010; Peng et al., 2008). As Child and Rodrigues (2005) contend, although the motivation to internationalise among Chinese firms can be explicated in terms of the same strategic factors that apply to firms in market economies, namely the need to compete by exploiting or seeking assets, the decisions that they make about the pattern of internationalisation will be informed by established mind-sets and existing practice, reinforced by institutional norms. Hence, institutional theory is a powerful tool for understanding internationalisation from emerging markets, such as China, that still feature a legacy of heavy institutional and political involvement in business affairs notwithstanding the emergence of market system (Child and Rodrigues 2005; Luo, Xue and Han, 2010; Wang et al., 2012).

As profound differences in institutional frameworks exist between emerging and developed economies, it is crucial to investigate the effects of formal and informal constraints of an institutional environment upon firms' strategic choices (Peng et al., 2008). Accordingly, researchers increasingly use the institution-based view of strategy as the predominant perspective to explore how home country institutions and particularly the role of the Chinese government act such as 'institutional support' as the key driving force of internationalisation (Deng, 2012). Institutional support reflects the extent to which government and its agencies provide initial and continuing support for firms in order to mitigate the adverse effects of the inadequate institutional infrastructure in the transition process (Li and Atuahene-Gima, 2001). With support from the Chinese government, some Chinese domestic enterprises have been rapidly modernising and building up international competitiveness on a worldwide scale, largely through aggressive international expansion (Lu et al., 2011). It seems that the ownership advantages from the possession of resources and capabilities that Chinese

firms enjoy are mainly home country based (Wei, et al, 2014). Furthermore, the literature has stressed that the role of a supportive policy by the government is important in encouraging indigenous companies to go international (Buckley et al., 2004; Luo et al., 2010; Voss et al., 2010). For instance, the Chinese government's 'Go Global' policy has positively attempted to stimulate Chinese firms to engage in internationalisation. Since internationalisation is the resource-consuming and high-risk business activity, such institutional support is particularly significant for SMEs in high-technology, given their liabilities of smallness and foreignness. Based on this discussion, we hypothesise:

H5: Export performance of high-technology SMEs in emerging markets is positively associated with institutional support.

5.2.3 Interactions between Returnees and External Environment

The above hypotheses consider different factors that drive the internationalisation of high-technology SMEs in emerging economies. While researchers have begun to stress the role of institutional and industrial environments in directly affecting firms' strategic choice and subsequent performance, they have rarely looked beyond the task environment to explore interactions between institutional and industry environments, and firms, especially those that founded by returnees. Relative to their local counterparts, returning entrepreneurs typically have limited local connections and local knowledge, which in turn will adversely affect the performance of their ventures (Li et al., 2012). Arguably, if an environmental factor help reduce the magnitude of a returnee leader's disadvantages, it should improve the performance.

Internationalisation can be viewed as continuous input, with process, output, and feedback activity over time, whereby the external environment acts as a moderator on internationalisation behaviour (Lu et al., 2011). In other words, returnee entrepreneurs

and external environments may be interrelated, in the sense that they may complement each other in terms of their effects on expert performance of high-technology SMEs in emerging markets.

Operating in high-technology industries where technology advantages are critical for success, SMEs are under increasing pressure from rapid technological changes. Technological information is dense, reflecting a high frequency of unexpected and novel changes that make firms difficult to respond with objective and formal procedures (Daft and Weick, 1984). Consequently, technology uncertainty may increase difficulties and costs for SMEs in gathering and analysing not only the nature of technological changes, but also their implications for customer demands and needs (Tushman and Nelson, 1990). Furthermore, as costs and difficulties of generating new technology and product increase, high-technology SMEs without strong technological capabilities are less likely to engage in internationalisation when technology uncertainty is high. However, returnee entrepreneurs, who have often acquired superior knowledge and skills through the scientific and technological training they received in developed countries (Li et al., 2012), may capitalise on their technology advantages to outperform the local counterparts. Hence, we hypothesise:

H6: The presence of returnee entrepreneur will have a stronger, positive relationship with high-technology SMEs export performance when technological turbulence is high than when it is low.

It should be noted that high-technology industries are taken as strategically important industries in China. The Chinese government has provided strong support with regard to financing, information, and technology for firms in these industries through institutional devices and regulatory regimes (Li and Zhang, 2007). Child and Rodrigues (2005) have underscored the role of government, suggesting that the interplay between government

and entrepreneurship may provide new insights for theoretical development of the internationalisation of Chinese firms. In particular, the government emphasises the role of internationalisation in promoting export and acquiring strategic assets abroad through various supportive policies (Luo et al., 2010).

Given returnee's importance in increasing the integration of domestic firms into the global economy, emerging market governments, particularly in the Chinese context, have set up various science parks and technology experimental zones to attract returning overseas entrepreneurs. In these science parks returning entrepreneurs setting up new high-technology ventures are being offered tax holidays plus subsequent 3-year tax reductions, cheap office space, start-up loans, advice centres and other incentives by the government (Filatotchev et al., 2009). Furthermore, the Chinese government has implemented 'The Recruitment Programme of Global Experts' (also known as Thousand Talents Plan) in order to attract more and better returnees (Wang and Lu, 2012). It can be speculated that returnee ventures with support from the government will have a better export performance. Therefore, we hypothesise:

H7: The presence of returnee entrepreneur will have a stronger, positive relationship with high technology SMEs export performance when institutional support is high than when it is low.

5.3 Research Context

The present study focuses export performance of high-technology SMEs in China. The reasons China is selected as our empirical setting are as follows. First, since the implementation of the open door policy in 1978, China has made great efforts to transform the former central planning system to the current quasi-market economy characterised by economic liberalisation with the retention of government controls (Luo, 2007). Reforms in the direction of liberalisation and marketization have

introduced significant and comprehensive changes to the opportunities and incentive structures that have been shaped by a centrally planned economy, and stimulated the growth of SMEs, particularly in high technology industries (Peng, 2003). However, China's economic transformation and market are featured with immense volatility and lack of institutions and strategic market factors to support business and innovation of high-technology SMEs (Luo, 2003).

Second, it is increasingly recognised that human mobility across national borders - returnee entrepreneurs - are important driver of innovation and business success of firms in emerging markets. For example, more than 275, 000 overseas Chinese scientists and students had returned to China by 2006 (National Bureau of Statistics of China, 2007). Among these individuals, around 5000 returnees have set up 2000 new high-technology ventures in Beijing Zhongguancun Science Park (ZSP), China's Silicon Valley (Liu, Lu, Filatotchev, Buck and Wright, 2010). In an emerging economy such as China, returnees who bring back new knowledge and experience may generate positive effects on the technological capability of local firms, ensuring their chances for survival and success (Saxenian, 2006). Therefore, China's emerging economy provides a rich and unique context to help elucidate how returnee can contribute to high-technology SMEs export performance.

5.4 Measures of Constructs

The survey items are adapted from prior studies to ensure the validity of all measures. As suggested by previous research (e.g., Tan, 1996), all the items used in this study are corroborated through extensive consultations with senior managers to better fit the Chinese context. All the survey items are shown in Table 5.1, and are measured with a 5-point Likert scales, where 1= strongly disagree (or very low) and 5= strongly agree (or very high).

Consistent with previous studies (Brouthers, 2013; Woodcock, Beamish, and Makino, 1994), we used subjective measures of export performance. Scholars suggest that subjective measures (management evaluations) of performance should be used where firms may be reluctant or unable to provide objective financial measures, or because of the difficulty in reconciling cross-national or cross-industrial differences in accounting practices, variations in exchange rates, and financial reporting between different home and host countries (Brouthers and Xu, 2002). Further, prior studies have found that the use of subjective measures of performance relative to competitors is legitimate in studying emerging businesses, and that these measures correlate with objective measures with a high degree of reliability (Chandler and Hanks, 1993; Luo and Peng, 1999). In particular, in the context of SMEs, financial measures are considered more difficult to obtain, since SMEs' entrepreneurs in emerging economies may have strong incentives not to disclosure their firms' financial performance for fear of attracting unwanted attention from corrupt government officials or criminal circles (Peng, 2000). Hence, following Filatotchev et al., (2009) and Lu et al., (2010), we measure export performance with four items that ask respondents to indicate the extent to which they have been satisfied with the export performance of their firm with respect to (1) sales growth in international markets, (2) pre-tax profitability in international markets, (3) market share in international markets, and (4) return on investment (ROI) through overseas sales. All the measures are commonly used to assess international performance (Hult et al., 2008).

A technology SMEs led by a returnee leader refers to one whose 'legal representative' is a returnee, and a venture led by a local refers to one whose legal representative is a local (Li et al., 2012). According to China's 'General Principles of The Civil Law' (Article 38), a firm's legal representative is the responsible person who acts on behalf of the firm in exercising its functions and power. Thus, the 'legal representative' is a key executive

position of a technology venture in China. Following Liu et al. (2010) and Li et al. (2012), returnee venture was coded as a dummy variable, which equals to1 if a venture's legal representative is a returnee (0 otherwise). In our sample, 19.2 percent of ventures have a returnee as the legal representative of the firm.

Further, as Reuber and Fischer (1997) contend, the experience of the founder or the top management teams is likely to influence the behaviours of an SME, and these behaviours, in turn, will influence subsequent firm performance. Hence, a dummy variable is used for entrepreneurs' international experience (work experience in an MNE), taking the value 1 if the top executives previously worked for MNEs, and 0 otherwise (Liu et al., 2010).

We measure inward-internationalisation orientation with three items adapted from Zhou, Wu, and Luo (2007). The inward-internationalisation orientation scale consists of three items: (1) utilised advanced management skills from foreign countries; (2) utilised advanced and new technology from foreign countries; and (3) utilised foreign direct investment (FDI). The scale captures the extent to which high-technology SMEs utilise advanced management skills, advanced and new technology, as well as direct investment from foreign countries.

We derive the measure of international networks from previous studies (Wright et al., 2008; Dai and Liu, 2009). It consists of three items and focuses on the degree of importance of three types of networks: (1) business networks established with firms in foreign markets; (2) business contacts maintained with people in foreign markets; (3) membership of business and professional associations abroad.

Following Li and Atuahene-Gima (2001), we measure institutional support that request respondents to indicate the extent to which they agree with the following statements in relation to institutional support over the past three years: (1) implemented policies and

programmes that have been beneficial to business operation, (2) provided needed technology information and technical support, (3) played a significant role in providing financial support, and (4) helped firms obtain licenses for imports of technology, manufacturing and raw material, and other equipment.

Adapting from Atuahene-Gima and Li (2004) and Jaworski and Kohli (1993), we measure technological turbulence that ask respondents to indicate the extent to which they agree with the following statements in relation to their industry in the last three years: (1) the technology in this industry is changing rapidly; (2) technological changes provide substantial opportunities in this industry; and (3) a large number of new product ideas have been made possible through technological breakthroughs in this industry. These three items evaluate the perceived speed and magnitude of change and uncertainty in technology and the variety of new product introductions afforded by changing technology in the industry (Atuahene-Gima and Li, 2004).The use of managers' perception of environment has been supported by a number of prior studies based on the relevance of such perception to the formulation of strategy as well as their accuracy with respect to objective measures of environmental conditions (Dess and Robinson, 1984; Downey et al., 1975; Li et al., 2005).

In this study, we included both organisational and environment factors as control variables that are believed to have effects on export performance of high-technology SMEs in emerging markets. We firstly control for firm size because in emerging economies such as China, information asymmetry and high transactions costs tend to favour large-sized organisations with slack resources and access to institutions, which smaller firms do not enjoy (Li et al., 2006; Zhao et al., 2011). Luo and Peng (1999) also find a positive association between firm size and export performance. To prevent skewness, firm size is measured as the natural logarithm of the number of employees of

the firm. Further, firm age might have an impact on firm export performance (Lu et al., 2010; Zhou et al., 2007). As Yiu, Lau, and Bruton (2007) maintain, firm age is important in an emerging economy, because older firms that have been embedded in the pre-reformed period are more risk-averse and inertial for corporate entrepreneurship and international venturing. We measure firm age as the number of years since the high-technology SMEs was established in China. We also include firm's ownership as a dummy variable, with privately-owned firms taking the value 1and 0 otherwise. It should be noted that firms' performance may vary across industries (Li et al., 2012). Firms in our sample fall mainly into the following segments of the high-technology industries: electronics and information technology, bio-engineering and new medical technology, and advanced manufacturing technology and others. Thus, following Liu, Lu, Filatotchev, Buck and Wright (2010), we control for industry-specific effects by introducing industry dummies in the models.

Furthermore, we included dysfunctional competition, since it may have a negative impact on a firm's international performance. Dysfunctional competition refers to the extent to which the competitive behaviour of firms in a market is unethical or even unlawful (Li and Atuahene-Gima, 2001). It has been observed that unlawful or unfair competitive practices (e.g., false advertising, piracy, contract violations, counterfeiting) have become widespread in China (Guo, 1997; Ho, 2001). The intellectual property rights of high-technology SMEs may go unprotected, making internationalisation a highly risky and less profitable strategy for firms. Thus, following Li and Zhang (2007), four items are used to measure dysfunctional competition that indicate the extent to which the firm's principal industry has experienced the following in the last three years: (1) unlawful competitive practices such as illegal copying of new products; (2) counterfeiting of the venture's own products and trademarks by other firms; (3)

ineffective market competitive laws to protect the venture's intellectual property; and (4) increased unfair competitive practices by other firms.

5.5 Adequacy of Measures: Reliability, Validity, and Common method variance

We take several steps to assess the construct reliability and validity of all measures. As noted earlier, we pilot tested the survey with 14 founding members and top executives of 12 high-technology SMEs. In the questionnaire itself, previously validated measurement items are used to help ensure construct validity. Following the guidelines outlined by Anderson and Gerbing (1988) and Zhang and Li (2010), we first assess the reliability of the multi-item constructs with Cronbach's alpha. As shown in Table 5.1, the Cronbach's alpha for all scales are greater than the recommended threshold of 0.70 and the composite reliability of each construct were all above the generally recommended threshold of 0.70, indicating that the items of each construct are internally consistent and the scales are deemed reliable for further data analysis (Nunnally, 1978). Furthermore, as shown in Table 5.1, the KMO (0.789) and Barlett's test of sphericity (3079.876) are highly significant ($p < 0.001$), suggesting that factor analysis is suitable for this data.

Next, using AMOS 19.0 with maximum likelihood estimation, confirmatory factor analysis (CFA) is performed in order to assess unidimensionality, convergent validity, and discriminant validity of the multi-item constructs (Joreskog and Sorbom, 1993). A six-factor measurement model is examined in which the indicators of the six constructs – export performance, international networks, inward internationalisation orientation, institutional support, technological turbulence, and dysfunctional competition are allowed to load only on their expected latent variables. It should be noted that the chi-square ($\chi2$) likelihood ratio test is very sensitive to the sample size as well as the number of items and constructs in the model (Zhao et al., 2011). Hence, $\chi2/df$ and other

fit indexes are used in this study. Consistent with previous research, the recommended cutoff line are used. For instance, the threshold for χ2/df ratio should be less than 3.0 or less than 2.0 in a more restrictive sense; Adjusted goodness-of-fit (AGFI) index should be over 0.80; Values of goodness-of-fit index (GFI), normed fit index (NFI), comparative fit index (CFI), incremental fit index (IFI), and Tucker-Lewis coefficient index (TLI) should be over 0.90 (Bentler and Bonnett, 1980; Hu and Bentler, 1999). Root mean square error of approximation (RMSEA) value should be less than or equal to 0.08 to indicate a reasonable fit of the model (Browne and Cudeck, 1993).

The results of a confirmatory factor analysis (CFA) indicate that the hypothetical model fits the data reasonably well (χ^2= 348.71, p= 0.00, χ^2/df = 2.0, GFI = 0.89, AGFI = 0.85, NFI = 0.89, CFI = 0.94, IFI = 0.94, TLI = 0.93, and RMSEA = 0.06), thereby confirming the unidimensionality of each construct in the model (Anderson and Gerbing, 1988). Although the values of GFI and NFI are slightly lower than the recommended value of 0.90, they are close to 0.90 and are deemed as acceptable (Bollen, 1989). As presented in Table 5.1, the standardised factor loadings of all items load significantly on their respective factors, with factor loading ranging from 0.564 to 0.946. All the average variance extracted (AVE) for the study constructs are above 0.50 which is the threshold recommended by Bagozzi and Yi (1988) and Fornell and Larcker (1981), thereby providing evidence of convergent validity.

As recommended by Fornell and Larcker (1981), discriminant validity is assessed by comparing the AVE of each construct with the variance shared between the constructs. Table 5.2 consists of the square roots of the AVE for each individual latent variable along the diagonal and correlation coefficients in the off-diagonal elements. The discriminant validity of a construct is adequate when the diagonal element is larger than each of the off-diagonal elements in the corresponding rows and columns (Hair, Black,

Babin, Anderson, and Tatham, 2006). As shown in Table 5.2, the results satisfy those requirements. Thus, the results indicate that all shared variances are less than the AVEs, confirming a sufficient discriminant validity of all the constructs used in this study.

Since this study employs cross-sectional survey data and a single respondent from each firm, the data may introduce the potential of common method variance (Podsakoff, MacKenzie, Lee, and Podsakoff, 2003). Scholars recommend using both procedural and statistical methods to minimise the bias (Podsakoff et al., 2003). Regarding procedural methods, the respondents are assured of the confidentiality and anonymity to reduce their evaluation apprehension and 'make them less likely to edit their responses to be more socially desirable, lenient, acquiescent, and consistent with how they think the researcher wants them to respond' (Podsakoff et al., 2003:888). Regarding statistical techniques, this study uses Harman's single factor test to check for the presence of the common method bias (Podsakoff and Organ, 1986). The analysis resulted in six factors with eigenvalues greater than 1.0, with the first factor accounting only for about 25.20% of the total variance. The results indicate that neither a single factor nor a general factor accounted for the majority of the convariance in the measures. In addition, following Podsakoff et al. (2003) and Zhang and Li (2010), this study employs the latent variable approach by which the items are allowed to load on their theoretical constructs as well as on a latent common methods variance factor. Then the significance of the structural parameters both with and without the latent common methods variance factor in the measurement model is examined. The results indicate that all significant relationships are held after controlling for latent common methods variance factor and provide evidence that common method variance is not an issue in this study.

Table 5.1 Construct measurement

Item description summary	Standardised loading	t-value
Export performance (EP) (α= 0.931)		
AVE = 0.782 CR= 0.935		
1. Sales growth in international markets	0.899	17.466
2. Pre-tax profitability of sales in international markets	0.928	18.273
3. Market shares in international markets	0.901	17.537
4. Return on investment in international markets	0.805	Fixed
Technological turbulence (TT) (α= 0.849)		
AVE = 0.687 CR= 0.859		
1. The technology in this industry is changing rapidly	0.783	12.441
2. Technological changes provide substantial opportunities in this industry	0.919	13.210
3. A large number of new product ideas have been made possible through technological breakthroughs in this industry	0.747	Fixed
Dysfunctional competition (DC) (α= 0.879)		
AVE = 0.645 CR= 0.879		
1. Unlawful competitive practices such as illegal copying of new products	0.823	13.421
2. Counterfeiting of your own products and trademarks by other firms	0.840	13.675
3. Ineffective market competitive laws to protect your firm's intellectual property	0.774	12.566
4. Increased unfair competitive practices by other firms in the industry	0.772	Fixed
Inward-internationalisation orientation (IO) (α= 0.755)		
AVE = 0.538 CR= 0.777		
1. Our firm utilised advanced management skills from foreign countries	0.827	8.357
2.Our firm utilised advanced and new technology from foreign countries	0.793	8.344
3. Our firm utilised foreign direct investment (FDI)	0.564	Fixed
Institutional Support (IS) (α= 0.809)		
AVE = 0.526 CR= 0.814		
1. Implemented policies and programmes that have been beneficial to business operation	0.714	10.030
2. Provided needed technology information and other technical support	0.833	11.067
3. Played a significant role in providing financial support	0.635	9.045
4. Helped firms obtain licenses for imports of technology, manufacturing and raw material, other equipment	0.703	Fixed
International networks (IN) (α= 0.814)		
AVE = 0.614 CR= 0.823		
1. Networks established in foreign markets	0.737	10.044
2. Contacts maintained with people in foreign markets	0.946	10.397
3. Membership of different associations abroad	0.637	Fixed

Notes: b. AVE, average variance extracted; c. CR, composite reliabilities

K-M-O Measure of Sampling Adequacy = 0.789;

Barlett's Test of Sphericity = 3079.876; P < 0.001.

5.6 Data analysis and Results

Table 5.2 presents means, standard deviations, correlations, and square roots of the average variance extracted (AVE) values. As Table 5.2 shows, most of explanatory variables and controls are correlated with export performance, and the correlation coefficients of explanatory variables have the predicted signs. Table 5.3 presents the results of multiple regressions. Following Cohen and Cohen's (1983) recommendations, the variables were entered into hierarchical multiple regression in three steps: Model 1 only includes the control variables, followed by the predictors included in Model 2, and finally, the moderator variables included in Model 3. In Model 2, adding the focal independent terms significantly increases R-square by 14.7%. The addition of the interaction terms in Model 3 also increases the R-square significantly compared with Model 2 ($\Delta R^2 = 0.037$, $p < 0.01$), indicating the existence of moderating effects. The variance inflation factors (VIFs) associated with each of the regression coefficients (1.032 - 1.747) are well within the cutoff value of 10, a common threshold for acceptance, so multicollinearity is not a serious problem (Neter et al., 1985).

All hypotheses are tested based on Model 3, which has the most complete model specification. Hypothesis 1 proposes that the presence of returnee entrepreneur will be positively related to high-technology SMEs export performance. While returnee venture is negatively related to export performance, the coefficient is not significant ($\beta = -0.033$, n.s.), providing no support to Hypothesis 1. A possible explanation may be that returnee presence alone does not add export advantage for high-technology SMEs; therefore, returnee ventures tend to underperform as compared to ventures with a local entrepreneur.

Hypothesis 2 pertains to the effects of managers' previous international experience on firm's international performance. As shown in Table 5.3, international experience is positively related to high-technology SMEs export performance ($\beta = 0.311$, $p < 0.05$), in support of Hypothesis 2. Hypothesis 3 posits the inward internationalisation orientation will be positively related to SMEs export performance. In support of this hypothesis, our results show that the inward internationalisation orientation is positively associated with SMEs export performance ($\beta = 0.134$, $p < 0.05$). Hypothesis 4 proposes managers' international networks will be positively related to SMEs export performance. Our results show that the effect of managers' international networks is positively associated with export performance ($\beta = 0.219$, $p < 0.01$). This lends support to Hypothesis 4. Hypothesis 5 predicts a positive relationship between institutional support and SMEs export performance. Our results indicate that institutional support is positively associated with SMEs export performance ($\beta = 0.184$, $p < 0.01$), in support of Hypothesis 5.

In Hypothesis 6, we consider the moderating effect of technologic turbulence. Our results show that the interaction of returnee venture and technological turbulence is positively related to high-technology SMEs export performance ($\beta = 0.537$, $p < 0.01$), in support of Hypothesis 6. To facilitate interpretation of these findings, this study plots this interaction effect in Figure 5.1 by following the procedure recommended by Aiken and West (1991). To create the plot, all variables except returnee venture and technological turbulence in Model 3 of Table 5.3 were constrained to sample mean. Returnee venture took the values of 0 and 1 because it is a dummy variable. Technological turbulence took the values of one standard deviation below and above the mean. The interaction effect illustrated in Figure 5.1 demonstrates that high-technology SMEs with returnee leaders outperformed as compared to SMEs with local leaders

when the level of technological turbulence is high than when it is low, which is consistent with Hypothesis 6.

Hypothesis 7 postulates that institutional support would improve the international performance of high-technology SMEs with a returnee leader relative to SMEs with local leaders. This hypothesis proposes that the interaction of returnee venture and institutional support is positively associated with SMEs export performance. The coefficient for the interaction of returnee venture and institutional support is negative (β = -0.052), however, it is not significant. Thus, Hypothesis 7 is not supported.

With regard to control variables, firm age and size are not statistically significant in the estimation, as shown in the baseline Model 1. As Reuber and Fischer (1997) suggest, a firm's size and age do not in themselves determine the capacity of the firm for internationalisation. Consistent with previous research, our result confirms that a firm's age and size play a less important role in high-technology SMEs export performance. Dysfunctional competition has significantly negative relationship with high-technology SMEs international performance (β = -0.111, $p < 0.05$). This finding suggests that high-technology SMEs are more likely to be successful in international market when the level of dysfunctional competition is low. As Peng and Heath (1996) posit, formal market institutions in emerging economies have not been well developed to govern market transactions and protect intellectual property rights. When the market competition is highly dysfunctional, it may be difficult to monitor and enforce business contracts, which will increase firms' concerns about moral hazards in their business environments (Li and Zhang, 2007). Under such conditions, it is unlikely for high-technology SMEs with liabilities of newness and smallness to engage in internationalisation. Further, it should be noted that industry dummy variables are not significant, indicating that sectoral variation do not affect export performance of high-

technology SMEs, in consistent with previous studies (e.g., Filatotchev et al., 2009). As in Table 5.3, Model 2 and 3 also indicate that export performance is higher in privately owned firms. Taken together, privately owned enterprises are more likely to be exporters and tend to perform stronger than state-owned enterprises (SOEs) or other collectively owned enterprises in terms of international performance, in consistent with previous studies (e.g. Zhou, Wu, and Luo, 2007).

Table 5.2 Correlation matrix and descriptive statistics

Variables	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11
1. Size	5.281	0.912											
2. Ownership	0.735	0.442	-0.103a										
3. Age	11.981	4.485	0.293c	-0.090									
4. Returnee Venture	0.190	0.395	0.096	-0.303c	0.076								
5. MNE experience	0.300	0.457	0.035	-0.011	-0.033	0.474c							
6. Dysfunctional Competition	2.915	0.971	-0.034	-0.023	0.014	0.055	-0.011	*0.803*					
7. Technological turbulence	3.682	0.870	0.123b	-0.060	-0.090	0.149b	0.141b	-0.106a	*0.829*				
8. International networks	3.614	1.008	0.067	-0.285c	-0.013	0.223c	0.137b	0.109a	0.210b	*0.784*			
9. Inward Internationalisation	3.474	0.949	0.226c	-0.055	0.116a	0.202c	0.046	-0.124b	0.257c	0.264c	*0.733*		
10. Institutional support	3.689	0.708	0.120a	0.083	-0.020	0.087	0.116a	0.044	0.374c	0.177c	0.344c	*0.725*	
11. International performance	2.832	1.010	-0.114a	-0.036	-0.068	0.224c	0.192c	-0.137b	0.173c	0.354c	0.267c	0.240c	*0.884*

Note: N=260; a P < 0.1 b P < 0.05 c P < 0.01 (two tailed). Diagonal elements (in bold and italic) are square roots of the average variance extracted (AVE) values and off-diagonal numbers are correlations between variables in this study.

Table 5.3 Results of OLS regression analysis (N=260)

	Model 1		Model 2		Model 3	
	β	Std. Error	β	Std. Error	β	Std. Error
Constant	-0.079	0.986	0.296	0.919	0.649	0.906
Control Variables						
Firm size	0.040	0.069	-0.062	0.065	-0.039	0.064
Ownership	0.112	0.132	0.231*	0.129	0.240*	0.126
Firm age	-0.007	0.013	-0.005	0.012	-0.009	0.012
Dysfunctional competition	-0.111**	0.055	-0.135**	0.052	-0.151***	0.051
Industry dummies	Included		Included		Included	
Direct Effects						
H1: Returnee venture			0.120	0.159	-0.033	0.160
H2: MNE experience			0.269**	0.130	0.311**	0.127
H3: Inward internationalisation orientation			0.142**	0.059	0.134**	0.058
H4: International networks			0.206***	0.058	0.219***	0.056
H5: Institutional support			0.144**	0.058	0.184***	0.062
Technological turbulence			-0.010	0.057	-0.118*	0.063
Moderating Effects						
H6: Returnee venture × Technological turbulence					0.537***	0.135
H7: Returnee venture × Institutional support					-0.052	0.130
F value	7.610***		9.574***		9.917***	
R^2	0.270		0.417		0.454	
Adjusted R^2	0.234		0.373		0.408	
ΔR^2	-		0.147***		0.037***	

Notes: ***$P<0.01$, **$p<0.05$, *$p<0.1$ (two-tailed tests). Unstandardized coefficients and associated standard errors are reported. Durbin-Watson: 1.165
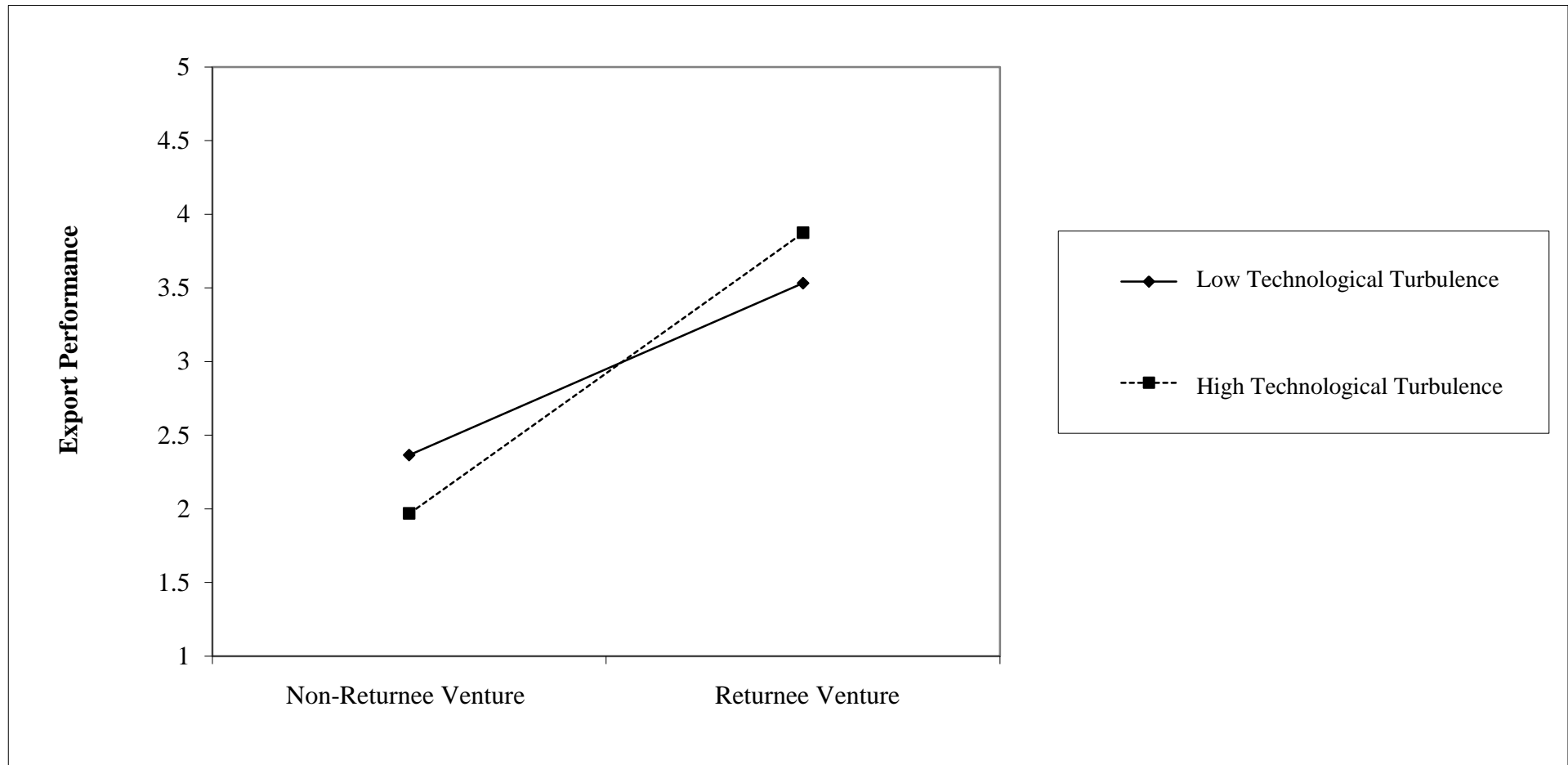
Figure 5.1   Returnee venture and export performance – the moderating role of technological turbulence

5.7 Discussion

This study develops an integrated research framework to examine the effects of internal resources, external networks, and institutional support on the export performance of high-technology SMEs in an emerging market such as China. In particular, this study examines the role of returnee entrepreneurs and institution-based view of strategy in internationalisation of the high-technology SMEs in China.

Our results revealed that managers' previous MNE work experience (Hypothesis 2), inward-internationalisation orientation (Hypothesis 3), the possession of international networks (Hypothesis 4), and institutional support (Hypothesis 5) are significantly associated with export performance. We also found that high-technology SMEs with a returnee leader tended to outperform as compared to ventures with a local leader when the level of technological turbulence is high than when it is low (H6).

Our result shows that the presence of a returnee entrepreneur in isolation does not affect the export performance of high-technology SMEs (as suggested in H1). The result contrasts with that from earlier studies of Chinese firms, which have found that returnee presence has a positive impact on the export performance of Chinese high-technology SMEs in emerging economies (Dai and Liu, 2009; Filatotchev et al., 2009). For instance, Filatotchev et al. (2009) have found that returnee entrepreneurs, acting as a new channel for international technology transfer, are promoters of internationalisation. Our different result implies that the presence of returnee entrepreneur alone do not automatically provide export advantages to our sample SMEs in high-technology industry. It should be noted that returnee entrepreneurs have both advantages and disadvantages. Relative to their local counterparts, returnee entrepreneurs, particular in high-technology fields, have often acquired superior knowledge, skills, and experiences through the scientific and technical training they received in developed countries (Li et

al., 2012). After years of studying or working in developed countries, returnees may have achieved a certain level of language proficiency and accumulated knowledge and experience for serving customers in host countries. It would appear that knowing foreign customers' tastes and preferences with such precision can predispose returnee entrepreneur to respond quickly to the needs of different international markets.

Nonetheless, returnees also have distinct disadvantages. In general, when returnees return to their often transitioning home countries, their unfamiliarity in terms of lack of local knowledge cause them to suffer from a liability of 'foreignness' (Li et al., 2012; Zaheer, 1995). In particular, institutional contexts in emerging economies are often characterised as a lack of formal institutional infrastructures and underdeveloped strategic factor markets (Hoskisson et al., 2000). Given the inadequate legal framework that protects property rights in an emerging economy, returning entrepreneurs' advanced technological knowledge and experience may not necessarily be transformed into better performance because their superior technologies or products can be illegally imitated by competitors. Furthermore, connections with critical local constituents, as suggested in previous literature, can work as substitutes for formal institutional support in emerging markets (Li and Zhang, 2007; Peng and Luo, 2000; Xin and Pearce, 1996). However, after years of living out of their home countries, returnees may have missed opportunities to build their local connections or may have lost old contacts (Qin, 2007). In addition, because of social, cultural, and institutional changes that occur in their absence, returnees may not have an accurate or comprehensive understanding of the market and society in their home countries (Li et al., 2012). Since most returnee ventures are small and highly specialised, they may need the maturation of the entire commodity chain to become a viable business (Zhou and Hsu, 2011). In so doing, returnee may need to accumulate commercial knowledge over time through learning, and thereby fitting into rapidly changing environments.

Because of risky and costly internationalisation and the relatively large domestic market, indigenous Chinese technology-based SMEs tend to start their businesses in the home market (Liu, Xiao and Huang, 2008). The large domestic market has enabled Chinese SMEs in high-technology industry to enhance competitive advantages and this has provided a solid foundation for international expansion (Lu, Liu and Wong, 2011). It should be acknowledged that domestic accumulation and development are critical for entering international markets. Some domestic exporters have become very competitive in the global market by means of leveraging their competitive advantages in China's domestic market (Gao et al., 2010). Furthermore, as Batjargal (2007) claims, emerging markets generally follow developed countries in their economic and technology development. Hence, returnees may contribute to the performance of high-technology SMEs by exploring and capitalising upon brokerage opportunities in home market. Taken together, the overall returnee leaders' disadvantages and their domestic market-oriented strategy have not generated a visible impact on export performance, suggesting that, in the sample of high-technology SMEs of current study, returnee presence does not help SMEs in high-technology industry expand abroad.

While the aforementioned result indicates that returnee presence does not offer high-technology SMEs advantage to promote internationalisation, our study extends this analysis by showing that returnee presence positively affect export performance of high-technology SMEs only when the level of technological turbulence is high than when it is low (as hypothesised in H6). A technologically uncertain environment creates not only new product development opportunities, but also challenges that may obligate firms to obtain new technologies and skills to introduce new products quickly, and thereby maintaining superior competitive position (Sheng et al., 2011; Tushman and Anderson, 1986). In such a situation where technological superiority is the key to success, high-technology SMEs tend to weather the uncertainty and turbulence by

competing on technological innovation capability, which is paramount for collecting and analysing technological information in high-velocity environments. Chinese returnee entrepreneurs are found to have particular advantages in terms of advanced technological and innovative knowledge through higher education and working in the West (Li et al., 2012; Wang and Lu, 2012). Not surprisingly, high-technology SMEs with returning entrepreneurs who are well-stocked with technological assets (i.e., patents) from abroad are able to respond quickly to the technological demands of international markets. Further, when the industry is characterised by rapid technological changes, the regulatory resources obtained from local connections with governments, such as project approval and bank credits, would not directly improve SMEs R&D activities, which are critical for upgrading or producing new technologies and products. Without strong technology-based capabilities, it may be difficult for high-technology SMEs to benefit from their export market transactions in a technologically uncertain environment. For this reason, high-technology SMEs with local leaders may fail to develop successful new products and satisfy overseas customer needs because they cannot match their technological-innovation-based capabilities to the new technological changes. Therefore, returnee SMEs are likely to outperform as compared to non-returnee ventures in conditions of high technological turbulence.

We find that top executive's past experience in MNEs positively affects export performance of high-technology SMEs (as showed in H2). Perhaps the mobility of former employees of MNEs enables SMEs to facilitate the transfer of competencies in terms of technological, marketing, and management know-how, which in turn boost export performance. Our finding contrasts with that from earlier research, which has found that either an entrepreneur's specific experience in MNEs is not significant, or that it impacts negatively on the export performance of Chinese firms (Filatotchev et al., 2009). The different result implies that MNE work experience is an important source of

knowledge, which helps our sample SMEs in high-technology industry overcome their disadvantages in terms of insufficiency of experiential knowledge and internationalisation experience. It also supports the research of Reuber and Fischer (1997), by indicating that internationally experienced top leaders are viewed as an advantage that serves to upgrade the operations of domestic SMEs and facilitate cognition of export opportunities, which enhance SMEs' export prospects.

Inward internationalisation orientation is found to be an important factor affecting export performance of high-technology SMEs (as suggested in H3). Internationalising SMEs in high-technology industry face constraints arising from their intrinsic deficiencies in resources and capabilities (Zhou, Wu and Luo, 2007). Thus, such constraints may make internationalisation a formidable challenge to most SMEs in emerging economies. It seems that learning from foreign countries offers a potentially efficient way to help overcome those difficulties that SMEs encounter, and thereby, accelerating internationalisation and enhancing export performance. By learning about and utilisation of advanced management skills and technologies introduced by foreign firms from developed countries, indigenous SMEs in high-technology industry are able to accumulate experiential knowledge and skills for entering foreign market. Further, our finding sheds light on the spillover effects of FDI in an emerging host economy such as China, that is, local SMEs can boost their export performance by utilising inward foreign direct investment (Buckley et al. 2002). Although the presence of FDI may increase local levels of competition, learning-oriented activities will enable local SMEs to harness their pre-existing competencies and push the internationalisation process forward far more quickly than would otherwise be the case. Finally, the inward-internationalisation orientation of entrepreneurs from local SMEs in high-technology industry reflects an incremental internationalisation mind-set that enhances firm's competitive advantages before finally engaging in international business.

Our result regarding the effect of international network is consistent with the findings of earlier studies, indicating that international networks positively impact on high-technology SMEs export performance (as showed in H4). It reflects the fact that international networks, in the emerging economy context of China, have an important impact on internationalisation decisions by reducing information asymmetries and providing the focal SMEs with important knowledge and resources (Filatotchev et al., 2009). Such network linkages may assist high-technology industry SMEs in identifying foreign market opportunities, providing the resources for high-technology SMEs in the early stages of internationalisation. Further, our finding indicates that engaging in international business and contacts may help local SMEs in high-technology industry build up their competitiveness. For instance, establishing inter-organisational collaborations with foreign business partners will assist high-technology SMEs in upgrading technological knowledge, obtaining market access, creating global value chains to target global niche markets, which subsequently enhance their foothold in international market.

Our result shows that institutional support significantly affects the export performance of high-technology SMEs in China (as showed in H5), suggesting that institutional support in China is more than a static background, but is an active agent (Lu et al., 2011; Peng et al., 2008). The institutional environment therefore can be regarded as a resource environment that provides SMEs with opportunities for conducting transactional activities (Wan, 2005). The impact of the institutional framework generated by governments on export performance of high-technology SMEs from emerging economies should be taken into account when considering the determinants of internationalisation at the firm level.

The improvement of institutional environments provides a favourable environment for Chinese firms to internationalise. First, since the formal initiation and implementation of the 'go global' mission in 2000, the Chinese government has encouraged firms to follow its global expansion strategies. For example, the so-called 'Measures of Capital Support for Small- and Medium Enterprises to Develop International Markets', first formulated in October 2000, is used to support the development of SMEs and stimulate SMEs to join in the competition of international markets (Luo et al., 2010). Further, Chinese government has issued 'Outbound Catalogue Guidance' in 2004 (Buckley et al., 2008), and listed the government's preferred host countries and industries, inducing Chinese firms to actively engage in internationalisation (Lu et al., 2011). Since Chinese privately-owned enterprises are officially permitted to apply for the approval of outbound investment projects in 2003, the government has drafted the relevant regulation (e.g., the so-called 'Encouraging and Supporting Go-global of Privately Owned Enterprises' in 2006), in order to support private firms to expand their business into global markets (Buckley et al., 2008; Luo et al., 2010). In addition, the Chinese government has implemented financial and taxation policies to promote domestic firms to do international business. For instance, the government has offered tax concessions and preferential credit, as well as set up 'International Market Developing Funds of Small- and Medium-Sized Enterprises' to financially support internationalising SMEs. Moreover, the Chinese government makes an effort to provide information service to SMEs by publishing 'Report on the Trade and Investment Environment in Different Countries' annually. In either case, institutional support is seen taking an significant role in shaping and encouraging high-technology SMEs to enhance their international competitiveness, and thus, promoting their entry into overseas markets.

In contrast, we found that the link between returnee ventures and export performance is not moderated by institutional support, even though the institutional support variable is

statistically significant and exerts a positive impact on export performance. The result may suggest that institutional support is a necessary and important force in helping high-technology SMEs accelerate internationalisation and boost export performance in China, regardless of whether those firms are owned by returning entrepreneurs or by home-grown entrepreneurs.

Taken together, these findings suggest that a synthesis of resource-based view, social capital, and institution-based view offers a good understanding of export performance of high-technology SMEs in the context of China. In particular, returnee presence, MNEs' work experience, inward internationalisation orientation, international networks, and institutional support are an integral part of the internationalisation process that helps boost export performance of high-technology SMEs from the emerging economies.

5.8 Contributions

The present study contributes to the understanding of internationalisation undertaken by high-technology SMEs from emerging economies in several ways. First, it provides a better understanding of the internationalisation of entrepreneurial firms in an emerging market such as China, in contrast to much of the literature which has mostly focused on developed economies. This study claims that the internationalisation of entrepreneurial firms in emerging markets is not the same as that of such firms in mature economies, because the institutional environments are different, and firms from emerging economies face greater resource constrains (Peng, 2003; Yamakawa et al., 2008). Furthermore, prior studies have tended to focus on large and well-established MNEs. However, scholars increasingly recognise that the internationalisation of entrepreneurial SMEs may differ from that of large multinationals, because limited resources constrain the entrepreneurial SMEs' choice of strategic options engaging in internationalisation (Lu, Zhou, Bruton and Li, 2010).

Next, it extends the existing literature on internationalisation of SMEs by proposing the mobility of highly-skilled and well-educated human resources. In particular, by considering the key role of human mobility as represented by returning entrepreneurs in the development of international activities, this study broadens our understanding of new drivers of internationalisation of SMEs in the context of emerging economies. This study also contributes to this line of research by empirically investigating how external environment such as technological turbulence may shape the relative effectiveness of returning entrepreneurs and their local counterparts in the development of international activities.

Finally, by incorporating the institutional component into existing internationalisation theory, this study helps to improve our understanding of the direct impact of institutional support on internationalisation by high-technology SMEs in emerging economies. This research also supports the recent recognition and call for the systematic investigation of the fact that interaction between the institutional legacies of emerging markets and the special human and social capital of their corporate entrepreneurs will be crucial for understanding the internationalisation strategy and performance of technology-based SMEs (Yiu, Lau and Bruton, 2007). Furthermore, this study extend the internationalisation framework of firms in emerging economies (Yamakawa et al., 2008) by taking into account the indirect impact of institutional factors on internationalisation of SMEs through these factors' interaction with returning entrepreneurs.

5.8 Managerial Implications

The findings from this study have some practical implications for policy makers and managers. For policy makers, it is important to continue providing government supports, as well as improving the institutional environment to stimulate entrepreneurial

SMEs to engage in internationalisation. As Luo et al. (2010) contend, preferential incentives and promotional policies enacted by emerging market governments are a legitimate and positive force encouraging new and small firms to undertake international activities. However, it should be noted that too much institutional support and intervention may distort the internationalisation of technology-based SMEs that are built on state subsidies or cheap bank credits instead of developing their own technological and managerial capabilities (Lu et al., 2011). In addition, our findings indicate that Chinese government supports do not particularly help returnee ventures boost their internationalisation performance. While Chinese government has offered preferential policies (e.g. The Thousand People Plan) with the aim of attracting more and better returnees back to China, there is no evidence that they help returnee ventures develop internationally and boost their subsequent performance. Thus policy makers from emerging economies need to formulate a set of effective and viable policies that assist SMEs in achieving international success.

For managers of high-technology SMEs in emerging economies, our findings help them understand that internal resources such as the entrepreneur's international work experience, inward internationalisation orientation and global networks are still the backbone for firms undertaking global expansion. In addition, managers should recognise and utilise institutional support and guidance when making internationalisation decision as well as conducting international activities. To take full advantage of home government support, managers of SMEs need to familiarise with government and industry policies, constantly communicate with governmental agencies, join in government-sponsored initiatives, and actively influence new policies and measures (Luo et al., 2010).

In particular, managers of returnee-owned SMEs in China should realise that being 'returnee' does not add additional advantages to help firms compete in international market in high-technology industry. Li et al. (2012) purportedly found that on average, new and small technology ventures with a returnee leader actually underperform compared with those with a local leader, partly because returnees are lack of local connections and lack of sufficient or updated understanding of societal and business practices in their home countries. Although returnees in general have more advanced education than their local counterparts, they need to update their knowledge of home country, as well as adapt themselves to fit the domestic community and society. Further, returning entrepreneurs should actively interact with governmental agencies and influence industry policies and measures.

5.9 Limitations and Future Research

This study is subject to several limitations, which also provide fertile avenues for further research. First, the study is cross-sectional and hence does not allow for causal interpretations among the variables. For example, it may be difficult to use cross-sectional data for detecting the potential endogeneity between export performance and international networks which are arguably seen as resource-consuming activities. Future studies should be conducted on this issue by using a longitudinal research design. Kraatz and Zajac (2001:653) have suggested a useful approach, 'of first identifying historically valuable resources and subsequently examining their impact over time in a changing environment context'. Using this approach, future research could be enabled to investigate how the different resources change and evolve in the process of economic transition.

Second, although this study considers a combination of RBV and institution theory, each theoretical perspective contains a relatively limited set of variables due to data

constrains. Our analysis aims to examining the essence, extent and effects of entrepreneur's human and social capital on export performance. Hence, future research efforts may wish to extend our study by including a wider range of factors or by integrating these effects in a more comprehensive framework that demonstrates how they interact with each other to determine internationalisation of entrepreneurial firms in emerging markets.

Finally, the sample in our study only covers some regions within a single country – China. The focus on Chinese firms may limit the generalisation to other emerging markets where institutions and regulations may be significantly different. With respect to the role of institutions, the legacies of the central planning system such as dominance of SOEs in strategic sectors and the strong control of government, make China different from other emerging economies (e.g. Brazil and other democratic Latin American countries) (Wang et al., 2012). Furthermore, this study only considers the role of institutional support of the home country in internationalisation of high-technology SMEs on account of data availability. Nevertheless, institutional constrains such as discrimination against privately owned enterprises, government corruption and under-developed market supporting mechanisms in the home country may also be important forces affecting internationalisation behaviour and performance (Lu et al., 2011). In addition, our research does not take into account host country institutions which may exert significant influences on firms, especially SMEs in high-technology industry, committing to international activities. Thus, it may be worthwhile for future research to examine whether the explanatory power of institution-based view is similar in other emerging markets and transition economies might be a worthwhile avenue for extending theorising about the role of government and institution in shaping firms' internationalisation.

In conclusion, this study examines the factors that determine export performance of high-technology SMEs in an emerging market. The findings contribute to our understanding of the roles of the entrepreneur's human and social capital and institutional supports in technology-based SMEs in emerging economies during the process of internationalisation.

Chapter 6

The Role of Returnee Entrepreneur, Market Orientation and Political Connection in Firm Performance: Evidence from High-Technology SMEs in an Emerging Economy

6.1 Introduction

Recently, scholars are paying more attention to strategies and the performance of technology-focused entrepreneurial firms and their role in promoting industrial development since they are expected to play a greater role in economies as they develop (Stinchcombe, 1965; Oviatt and McDougall, 1994). It seems that new technology-based ventures suffer from the liability of smallness and newness, because they often lack adequate knowledge of their environments, new product development experience, as well as managerial and financial resources (Shan, 1990; Zahra and Covin, 1993). Indeed, it is particularly true for high-technology small- and medium-sized enterprises (SMEs) in emerging markets in which firms are required to constantly deal with environmental volatility, to grasp appropriate information and knowledge in a timely manner, and to establish new markets and technologies because of dynamic market and technology changes (Katila and Shane, 2005; Li and Atuahene-Gima, 2001).

The literature suggests that SMEs need to effectively deploy firm resources to develop competitive advantage and to achieve better performance (Barney, 1991; Day and Wensley, 1988). As Lee, Lee and Pennings (2001) claim, technology-based SMEs should pursue entrepreneurial strategies that focus on the accumulation of intangible resources for survival and growth. Among various managerial resources, managers can generally offer human capital as indicated by the presence of returnee (Saxenian, 2006), and social capital as indicated by top managers' external networks (Granovetter, 1985; Shane and Cable, 2002). Furthermore, previous studies posit that top managers'

strategic orientation as a unique managerial resource reflects a firm's strategic focus in terms to creating behaviours that help it achieve superior performance (Gatignon and Xuereb, 1997). Specifically, market orientation is a firm's commitment to base strategic decisions on customer-oriented market intelligence (Baker and Sinkula, 2009; Jaworski and Kohli, 1993; Narver and Slater, 1990). In addition, market orientation offers an entrepreneurial firm with market-sensing and customer-linking capabilities that lead to superior firm performance (Kirca, Jayachandran and Bearden, 2005). Taken together, these managerial resources are instrumental in helping high-technology SMEs exploit external opportunities and enhancing their firm performance in a transitional economic environment.

Previous studies in this area mainly limited to large or well-established firms operating in developed markets with relatively stable institutional environments (Li, Zhou and Shao, 2009; Pelham, 2000). Relative to their counterparts in Western market economies, most of small technology ventures face not only resource limitations, but also other daunting challenges with regard to intense uncertainty, turbulent environments, as well as the increasing pressure to compete and innovate (Tan, 1996). Thus, this study tries to address the above gap by examining whether and how various managerial resources impact on high-technology SMEs firm performance in emerging economies that are experiencing significant institutional changes in moving from central planning to market competition (Li, Zhao, Tan and Liu, 2008; Liu, Lu, Filatotchev, Buck and Wright, 2010; Peng, 2003; Peng and Luo, 2000).

More important, it is argued that the effectiveness of internal resources is not universal but rather dependent on the institutional characteristics of emerging economies (Lee et al., 2001; Li and Zhang, 2007). Previous research has noted that, in an emerging economy (e.g. China), nonmarket forces still play an important role in business success,

even in the technology industries where technological competence should drive better performance and where state intervention should be less important relative to other industries (Li et al., 2012). Thus, political connections are necessary for high-technology SMEs to seek more institutional support and counter the threats and uncertainties inherent in an emerging market (Peng and Luo, 2000). Despite the importance of political connections in transitional business environments, it remains unknown how political connections could shape the effectiveness of other internal resources such as returnee presence and market orientation on firm performance. It is necessary to investigate how political connections moderate the relationship between internal resources and firm performance. Specifically, we will address two research questions: (1) How are returnee presences, market orientation and political connections related to high-technology SMEs firm performance in an emerging economy such as China? (2) How do political connections and other managerial resources (e.g. returnees and market orientation) intertwine to affect firm performance? This study makes an effort to provide a deeper understanding of the various antecedents of firm performance in the context of Chinese SMEs in high-technology industry. The conceptual framework is provided in Figure 6.1.
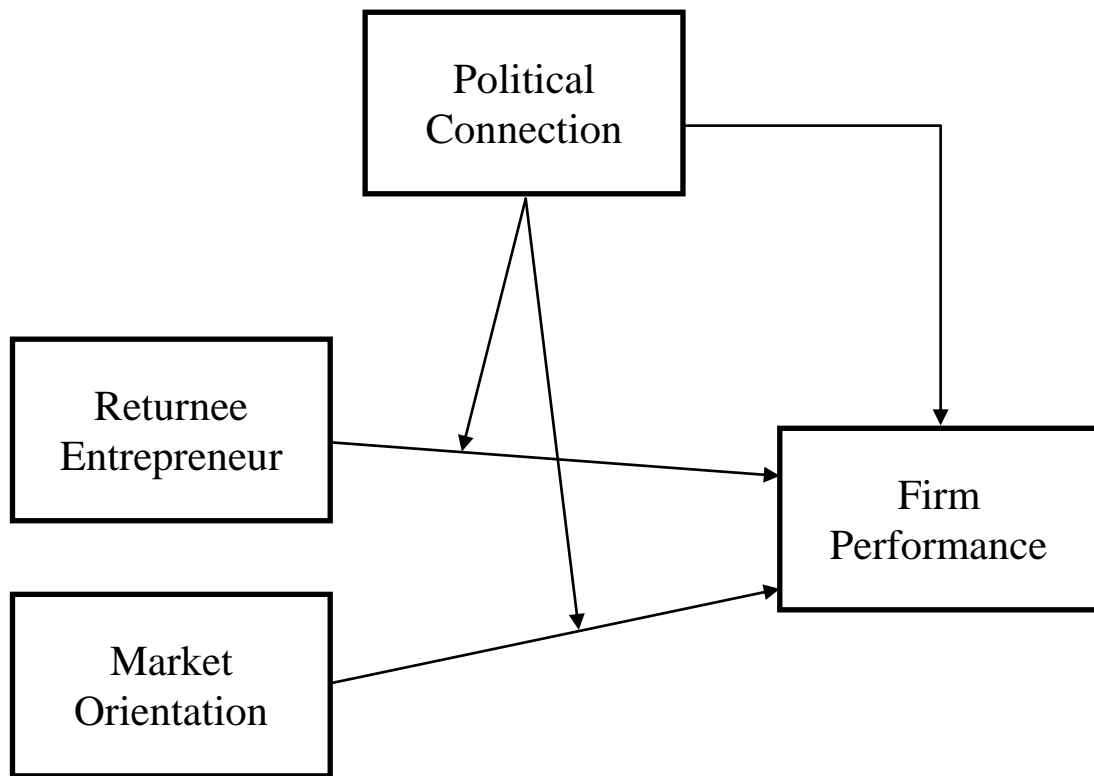
Figure 6.1 A conceptual model of returnees, market orientation and political
connections in high-technology SMEs performance in China

We argue that this study contributes to the existing literature in a number of ways. First,
in response to a recent call for understanding the determinants of firm performance of
entrepreneurial firms from emerging markets (Luo and Tung, 2007; Yamakawa et al.,
2008), this paper adds empirical evidence by examining both internal and external
factors that affect the firm performance of SMEs in high-technology industry in China.
It fills a research gap in existing studies that have taken the shift from developed
economies to emerging economies such as China. Second, this study also supports the
recent recognition of the new phenomenon that the role of mobile international talents
as represented by returnee entrepreneurs will be crucial for understanding the
entrepreneurial activities of high-technology SMEs in emerging economies. In addition,
this study provides empirical evidence and reinforces the proposition that market
orientation is an important antecedent of SMEs firm performance. Finally, findings of

this research not only allow us to better understand the independent role of political connections in helping technology-based SMEs improve their performance, but also advance an interactive effect that may describe to what extent different types of managerial resources affect firm performance.

Our main theoretical argument is the firm performance of high-technology SMEs in emerging economies depends on different types of managerial resources such as returnee entrepreneur, market orientation and political connection. Further, due to the unique market and institutional environments in emerging economies such as China, political connections may enhance the effectiveness of returnee entrepreneur and market orientation in affecting firm performance. Therefore, the research here provides a more comprehensive knowledge about high-technology SMEs in the context of emerging economies.

The remainder of this paper is organised as follows: First we discusses the theoretical background and develop hypotheses. Next we describe our research context used in this study. Finally, we present the research findings, contributions, implications, limitations and future research directions.

6.2 Theoretical Background and Hypotheses

6.2.1 The Resource-Based View (RBV)

The RBV regards the firm as a bundle of resources and suggests that their attributes significantly affect the firm's competitive advantage and, by implication, its subsequent performance (Barney, 1991; Wernerfelt, 1984). The RBV posits that firm-specific resources that are rare, valuable, inimitable and non-substitutable represent the main source of competitive advantage (Barney, 1991). In this sense, the firm's internal resources constitute a much more stable point of reference and develop as primary

sources of benefit and crucial determinants in the formulation of the organisational strategy (Grant, 1991). Previous studies have suggested that a firm's competitive advantage stems from its intangible resources and capabilities which are difficult to imitate and slow to develop (Barney, 1991; Peteraf, 1993). Taking this into account, the RBV has recently been used to identify the range of factors (intangible resources and capabilities) that affect firm performance of SMEs in both developed and emerging markets (Aragon-Sanchez and Sanchez-Marin, 2005; Dai and Liu, 2009; Lee et al., 2001; Li and Zhang, 2007; Wiklund and Shepherd, 2003).

In many new SMEs, entrepreneurs and top managers play a critical role in small business success (e.g., Eisenhardt and Schoonhoven, 1990; Keeley and Roure, 1990; McGee et al., 1995). Managers can generally offer two types of resources, including human capital as indicated by their knowledge, experience and strategic orientation, and social capital as indicated by their external ties (Davidsson and Honig, 2003; Li and Zhang, 2007; Li, Zhao, Tan and Liu, 2008). In particular, the resources and capabilities mobilised by a returnee entrepreneur have an important impact on the firm's ability to compete in emerging markets (Liu et al., 2010). Further, it will be more likely for technology-focused SMEs with market orientation to generate superior performance (Li et al., 2008). In addition, political connections as important managerial resources can substitute for the insufficient formal infrastructure in a transition economy (Xin and Pearce, 1996), and consequently boost high-technology SMEs firm performance. Therefore, in accordance with RBV, this study proposes that business success of SMEs, especially those that are in high-technology industry based in emerging markets, is driven by the presence of returnee entrepreneur, market orientation and political connections.

Returnees and High-Technology SMEs Firm Performance

Human resources – the pool of human capital under the firm's control - are regarded as an important driver of business success, as it is seemingly impossible to separate knowledge from those who possess it, and people involved in the firm are playing increasingly important role in conducting entrepreneurial activities (Liu et al., 2010; Wang et al., 2012; Wright et al., 1994). Human capital stresses that knowledge provides individuals with increases in their cognitive abilities, leading to more productive and efficient potential activity (Davidsson and Honig, 2003). Once engaged in the entrepreneurial process, individuals with more or higher quality human capital should arguably have superior ability in successfully exploiting opportunities (Davidsson and Honig, 2003).

Within this context, returnees may have specific, idiosyncratic human capital that associated with a spectrum of skills and knowledge with varying degrees of transferability (Castanias and Helfat, 1992). Returnee entrepreneur's human capital associated with considerable specific industry know-how, as well as valuable hands-on experience is important to new and small firms. After years of living in overseas, returnees' special experiences may shape the lens-like cognitive structures through which they see the whole world, and these cognitive structures (or mental model) enable entrepreneurs both to filter business opportunities and to interpret and construct meanings out of them, to cope with rapidly changing external environments and to make appropriate strategic responses (Filatotchev et al., 2009). In particular, returnees may also have better understand the origin and development of certain technologies and know which components of those technologies are critical, and thus helping domestic companies imitate and learn from foreign firms in emerging markets (Li, Zhang and Lyles, 2013). Returning entrepreneurs may have acquired academic knowledge in the

form of general education, scientific and technical training, and practical business skills (Liu et al., 2010). They may also leverage their knowledge and the social contacts generated through the previous education system to secure resources required to identify and exploit business opportunities in their home market (Wright, Liu, Buck and Filatotchev, 2008). For example, in China's Zhongguancun Science Park (ZSP), 38 percent of returnees have a PhD, 45 percent have a master's degree, and 57 percent already hold patents (Li et al., 2012). Further, returning entrepreneurs may have acquired practical business human capital from either working in a commercial environment or through having founded a business (Filatotchev, Liu, Lu and Wright, 2011).

It can be argued that previous knowledge and experience possessed by returnees may be transformed into valuable episodic knowledge such as managerial experience, enhanced reputation, access to finance institutions and broader social connections, making returnees inclined to recognise and leverage business opportunities (Filatotchev et al., 2009). The episodic knowledge can enable returning entrepreneurs to apply the relationships and processes of technological entrepreneurship to a new institutional environment and build connections with customers (Saxenian, 2006). Therefore, previous knowledge, experiences, problem-solving skills mobilised by a returning entrepreneur can contribute to the performance of high-technology SMEs by underpinning the process of the discovery and exploitation of opportunities in emerging markets. Thus, we hypothesise:

Hypothesis 1: *Firm performance of high-technology SMEs in emerging markets is positively associated with the presence of returnee entrepreneur.*

Market Orientation and High-Technology SMEs Firm Performance

As reported in previous literature, among various intangible resources that a firm possesses, a firm's strategic orientations are considered some of the most important because these skills sets are deeply ingrained into the daily routines of a firm and, as such, are difficult for competitors to copy (Zhou et al., 2008). A firm's strategic orientation reflects the strategic directions implemented by a firm to create the proper behaviours for the continuous superior performance of the business (Gatignon and Xuereb, 1997). In particular, market orientation mainly presents a firm's commitment to respond to market demand. As Li (2005) contended, the key to a market orientation lies in the firm's ability to seek and use market information to create and deliver superior customer value.

There are many definitions of market orientation. Narver and Slater (1990:21) define market orientation as an "*organisational culture that most effectively and efficiently creates the necessary behaviours for the creation of superior value for buyers and, thus, superior performance for the business*". Kohli and Jaworski (1990) define market orientation as company behaviours focusing on the generation of market intelligence that pertains to current and future customer needs, dissemination of that intelligence across company departments, and responding to changes in the competitive environment based on this intelligence.

The alternative view, that a firm's degree of market orientation reflects a matter of choice and resource allocation, is illustrated by Ruekert (1992:228) as "*the degree to which the business unit obtains and uses information from customers, develops a strategy which will meet customer needs, and implements that strategy by being responsive to customers' needs and wants*". From a customer-focus perspective, Atuahene-Gima (1996) defines market orientation as obtaining and using customer

information, developing a strategic plan based on such information, and implementing the plan to respond to customer needs.

Given its focus on generating and delivering value for the customer, market orientation has generally (although not universally) identified as a predictor of performance (Baker and Sinkula, 1999; Jaworski and Kohli, 1993; Kara et al., 2005; Li et al., 2008; Lonial and Carter, 2013; Matsuno and Mentzer, 2000; Pelham, 2000). More recently, researchers have suggested that market orientation can help small firms improve firm performance. For example, Kara, Spillan and DeShields (2005) suggest that market orientation using MARKOR scale in SMEs is positively associated with their business performance. In addition, the study of Pelham (2000) shows that strong market orientation enables small manufacturing firms to obtain needed input into their preparation of firm strategic planning and focuses for the plan's implementation, which in turn improves their firm performance.

For emerging and transitional economies, such as China, market orientation also positively influences firm performance (Li, Sun and Liu, 2006; Li, Zhao, Tan and Liu, 2008). It can be argued that SMEs may be more dependent on market orientation since they lack the economies of scale to compete with larger competitors on a price basis (Lonial and Carter, 2013). Whereas the business performance implication of market orientation has been well established in market-based economies wherein the mainstream theories have been built and examined, empirical evidence in emerging markets such as China has been far too limited to draw a definitive conclusion (Li et al., 2008). Therefore, this study proposes the following baseline hypothesis:

Hypothesis 2: *Firm performance of high-technology SMEs in emerging markets is positively associated with market orientation.*

Political Connection and High-Technology SMEs Firm Performance

Social capital has been gaining prominence as an intricate concept that provides a foundation for describing and characterising a firm's set of relationships (Inkpen and Tsang, 2005), and has been defined from different perspectives (Adler and Kwon, 2002; Burt, 1997; Portes, 1998). For this study, social capital refers to "*the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit*" (Nahapiet and Ghoshal, 1998: 243). According to social capital and network theory, economic actions are deeply embedded in interpersonal connections, and managers can use the social capital inherent in their managerial ties influence the allocation of resources and shape economic actions (Batjargal, 2003; Coleman, 1988; Granovetter, 1985; Uzzi, 1997). In other words, managerial ties, especially political connections, can work as substitutes for reliable government and the established rule of law in emerging markets (Xin and Pearce, 1996). Here, political connections refers to top managers' networks with government officials, including political leaders in various level of government, officials in industry bureaus, and officials in regulatory and supporting organisations (Peng and Luo, 2000).

One common feature permeating emerging economies is the existence of a high degree of institutional voids and uncertainties resulting from a lack of market supporting institutions (Luo, 2003). Further, because the government still controls significant portions of strategic factor resources and has considerable power to approve projects and allocate resources, managers tend to maintain a disproportionately greater connection with government officials at various levels of administrative and regulatory agencies (Child, 1994). As noted by Luo (2003), Chinese business people often prefer

to rely on their personal contacts with some government officials to get things done rather than depending on the abstract notion of impartial justice.

In such an environment, political connection is seen as a potential substitute for the insufficient formal institutional infrastructure in emerging economies because social capital engendered from connections with government and administrative officials can help alleviate firms' resource inadequacy (Li and Atuahene-Gima, 2001; Park and Luo, 2001; Xin and Pearce, 1996). More specifically, political connections can help firms obtain key regulatory resources encompassing industry development plans and regulatory policies, offer access to scarce resources, and improve a firm's political legitimacy which allows firms to receive exclusive government endorsements and favourable treatment (Sheng et al., 2011).

It is noted that high-technology industries, as examined in this study, are labelled as strategically important industries in China. The Chinese government has provided strong support in terms of financing, information, and technology for firms in high technology industries through institutional devices and regulatory regimes (Li and Zhang, 2007; Lu, 2000). However, compared with state-owned enterprises (SOEs) founded by the government or its agencies, non-state-owned ventures receive little support from the government and lack market legitimacy, thus they are in a relatively weak institutional position (Nee, 1992). This is particularly the case when we consider SMEs in high-technology industries in China, most of which are privately owned ventures. These SMEs may naturally suffer from liability of newness and smallness in China's emerging economy. Arguably, SMEs with good connections with the government may be better able to weather the challenges posed by the legal and political environments and build up their reputations through links networking with government officials, thus ensuring their chances for survival and success (Luo, Hsu

and Liu, 2008). Given the weak institutional arrangements in China, cultivating political networking is argued to be an effective way for high-technology SMEs to gain needed resources and supports, which in turn improve firm performance (Peng and Heath, 1996; Xin and Pearce, 1996). This discussion leads to the following hypothesis:

Hypothesis 3: *Firm performance of high-technology SMEs in emerging markets is positively associated with top managers' political connections.*

6.2.2 The Moderating Effects of Political Connections

While a firm's internal resources point to skills for the transformation of inputs into outputs, social capital pertains to the possibility of identifying and capitalising upon more rewarding opportunities (Burt, 1992; Pennings et al., 1998). As Lee, Lee and Pennings (2001) contended, when firms have less social capital, their internal resources and capabilities are bound to generate fewer rents and the market to value them to be much lower.

In our research context of China, although market-based mechanisms have been introduced and developed, state regulatory regimes still exert considerable influence on firms' operations and Chinese government still retains the power to allocate scarce resources and grant projects (Luo, 2007). Simply, firms closely connected with the government have institutional and resource advantages compared with those without close links with the government (Tan, Li and Xia, 2007). These advantages are particularly important to ventures led by returnees because returnees lack local knowledge and local connections (Li et al., 2012). After years of living outside of their home countries, many returnees find themselves largely uprooted from the social contexts in China (Qin, 2007). Further, in a transition economy, underdeveloped institutional framework and strategic factor markets may limit the appropriation of returning entrepreneurs' technological and managerial skills (Hoskisson et al., 2000).

Zhou and Hsu (2011:416) claim that returnees coming from well-established business environments may be more vulnerable if such local eco-systems are not in place. Because of the important role of government in China, returnees nurturing connections with government officials and agencies help them build legitimacy and gain local knowledge. Thereby, we argue that political connections can help returnee leaders reduce the magnitude of their disadvantages in an emerging and transitional market. For these reasons, this study proposes:

Hypothesis 4: *The positive relationship between the presence of returnee entrepreneur and high-technology SMEs firm performance will be stronger when the level of political connection is higher.*

Further, Market orientation can advance firm performance, as literature suggests, but such an effect may be limited, and market orientation in conjunction with political connections may help reduce the magnitude of such limitation. Political connections may serve as conduits for acquiring crucial market information and consequently enable SMEs in high-technology industry to continuously create and maintain superior value for their customers (Narver and Slater, 1990). This is particular true in emerging markets such as China, where market mechanism and marketing-supporting institution often are underdeveloped or under-enforced. Under such highly uncertain and turbulent transitional environment, political connections may enable Chinese high-technology SMEs with limited resources to gain unpublished market intelligence controlled by government agencies, reduce fewer bureaucratic delays responding to customer needs, and obtain protection from external threats to a firm's creditability in the marketplace (Luo, Hsu and Liu, 2008). Building political connections with the government, high-technology SMEs may be better able to acquire, understand and respond to market

intelligence, as well as establish a firm's reputation, which in turn enhance their firm performance. Therefore, we propose the following hypothesis:

Hypothesis 5: The positive relationship between market orientation and high-technology SMEs firm performance will be stronger when the level of political connection is higher.

6.3 Research Context

The present study focuses on firm performance of high-technology SMEs in emerging economies. China was chosen as the empirical setting in this study for the following reasons. First, since the implementation of the open door policy in 1978, China has made great efforts to transform the former central planning system to the current quasi-market economy characterised by economic liberalisation with the retention of government controls (Luo, 2007). Reforms in the direction of liberalisation and marketization have introduced significant and comprehensive changes to the opportunities and incentive structures that have been shaped by a centrally planned economy, and stimulated the growth of SMEs, particularly in high technology industries (Peng, 2003). However, China's economic transformation and market are featured with immense volatility and lack of institutions and strategic market factors to support high-technology SMEs to survive and success (Luo, 2003). Under such circumstances more research is needed to identify and examine the various antecedents of firm performance of SMEs in high-technology in China.

Second, it is increasingly recognised that human mobility across national borders - returnee entrepreneurs - are important driver of innovation and business success of firms in emerging markets. For example, more than 275, 000 overseas Chinese scientists and students had returned to China by 2006 (National Bureau of Statistics of China, 2007). Among these individuals, around 5000 returnees have set up 2000 new high-technology

ventures in Beijing Zhongguancun Science Park (ZSP), China's Silicon Valley (Liu, Lu, Filatotchev, Buck and Wright, 2010). In an emerging economy such as China, returnees who bring back new knowledge and experience may generate positive effects on the technological capability of local firms, ensuring their chances for survival and success (Saxenian, 2006).

Third, given that the most exciting research in market orientation and performance relationship has taken place in Western market economies, this study intends to draw more attention to high-technology SMEs in the Chinese emerging economy. Additionally, it is worthwhile for researchers to empirically investigate whether and how well-established Western knowledge can be applied to an emerging economy with market and institutional uniqueness.

Finally, China's unique culture emphasises collectivism rather than individualism and treats informal ties based on family, relatives, hometown connections, schoolmates, or even colleagues as an important strategic posture in business circles (Li and Zhang, 2007). Managerial networking is deemed to be a critical social capital that can enhance the performance. Therefore, China's emerging economy provides a rich and unique context to help elucidate how managerial networks (e.g., political connections) can contribute to high-technology SMEs firm performance.

6.4 Variables and Measurements

The survey items are adapted from prior studies to ensure the validity of all measures. As suggested by Tan (1996), all the items used in this study are corroborated through extensive consultations with senior managers to better fit the Chinese context. All the survey items are shown in Table 6.1 and are measured with a 5-point Likert scales, where 1= strongly disagree and 5= strongly agree or 1 = very weak and 5 = very strong.

Firm performance is adapted from Li and Zhang (2007) and Su, Xie and Li (2011). Subjective measures are used because previous research has provided substantial evidence supporting the reliability and validity of perceptual performance measures (Dess and Robinson, 1984). Kumar, Subramanian and Yauger (1998) suggest that it is appropriate to use subjective measures where objective measures were inappropriate or unavailable. For this study, a subjective rather than an objective measure was used for several reasons. First, the sampled firms in this study are all SMEs. Such firms are notorious for their inability and reluctance to provide desired information (Fiorito and LaForge, 1986). Further, objective financial data on SMEs, in general, are not publicly available, making it impossible to check the accuracy of any reported financial performance figures (Covin and Slevin, 1989). Finally, absolute scores on financial performance criteria are noted to be affected by industry-related factors (Miller and Toulouse, 1986). As such, this study measures SMEs firm performance with four market-related indicators, such as return on sales (ROS), cash flow from market operations, growth in profit, and return on assets (ROA) relative to its major competitors in the same industry.

A high-technology SMEs led by a returnee leader refers to one whose 'legal representative' is a returnee, and a venture led by a local refers to one whose legal representative is a local (Li et al., 2012). According to China's 'General Principles of The Civil Law' (Article 38), a firm's legal representative is the responsible person who acts on behalf of the firm in exercising its functions and Power. Thus, the 'legal representative' is a key executive position of a technology venture in China. Following Liu et al. (2010) and Li et al. (2012), returnee venture was coded as a dummy variable, which equals to 1 if a venture's legal representative is a returnee (0 otherwise), where a returnee is defined as a Chinese native with at least 2 years of commercial and/or

educational experience in an OECD country. In our sample, 19.2 percent of venture observations had a returnee as the legal representative of the firm.

Following Baker and Sinkula (2009), this study employs an operationalization of marketing orientation, the MORTN scale (Deshpande and Farley, 1998), which uses the most powerful measures from the three established scales in the market orientation literature, the MARKOR (market orientation) scale (Kohli, Jaworski, and Kumar, 1993), Narver and Slater's (1990) scale, and Deshpande, Farley and Webster's (1993) scale. For this study, we focus on firm's commitment to customer satisfaction (Baker and Sinkula, 2009). We discussed the meaning of each item with our interviewees during the pilot investigation phase, and requested them to rank the items in accordance with their importance in the Chinese context. Furthermore, when completing the primary factor analysis of this 10-item scale using sample data, we deleted 2 of the items which are shown to have a lower-than-average degree of importance and a factor-loading value lower than 0.5 (Li, Liu and Zhao, 2006). Hence, eight items are: (1) our strategy for competitive advantage is based on our understanding of customers' need; (2) we are more customer focused than our competitors; (3) we poll end users at least once per year to assess the quality of our products and services; (4) our business objectives are driven primarily by customer satisfaction; (5) we measure customer satisfaction systematically and frequently; (6) we have routine or regular measures of customer service; (7) we continually monitor customers and competitors to find new ways to improve customer satisfaction; (8) data on customer satisfaction are disseminated at all levels in this business on a regular basis.

We derive the measure of political connections from previous studies (e.g., Li and Zhang, 2007; Xin and Pearce, 1996). It consists of four items and attempts to measure the extent to which the high-technology SMEs' managers over the past three years have

(1) spent much effort in cultivating personal connections with officials of government and its agencies; (2) maintained good relationships with officials of state banks and other governmental agencies; (3) devoted substantial resources to maintaining good relationships with officials of administrative agencies; and (4) spent a lot of money on building relations with top officials in government.

Previous studies have suggested that both organisational and environmental factors may affect the link between internal and external factors and firm performance. Thus, we control for several variables in testing the hypotheses. We firstly control for firm size because in emerging economies such as China, information asymmetry and high transactions costs tend to favour large-sized organisations with slack resources and access to institutions, which smaller firms do not enjoy (Li et al., 2006; Zhao et al., 2011). To prevent skewness, firm size is measured as the natural logarithm of the number of employees of the firm. We also measure firm age as the number of years since the high-technology SMEs were established in China. We include firm's ownership as a dummy variable, with privately-owned firms taking the value 1and 0 otherwise. According to the definition of the Ministry of Finance and China National Bureau, firms in our sample fall mainly into the following segments of the high-technology industries: electronics and information technology, bio-engineering and new medical technology, new materials and applied techniques, advanced manufacturing technology, aviation and space technology, modern agricultural technology, new energy and high-power conservation technology, environmental protection technology, marine engineering technology, and nuclear-applied technology. Thus, following Liu, Wright, Filatotchev, Dai and Lu (2010), we control for industry-specific effects by introducing industry dummies in the models.

Furthermore, we controlled for technological turbulence that is the perceived speed and magnitude of change and uncertainty in technology and new product introductions spurred by changing technology in the industry (Atuahene-Gima and Li, 2004). Following Jaworski and Kohli (1993) and Li (2005), we measure technological turbulence that ask correspondents to indicate the extent to which they agree with the following statements in relation to their industry in the last three years: (1) the technology in this industry is changing rapidly; (2) technological changes provide substantial opportunities in this industry; and (3) a large number of new product ideas have been made possible through technological breakthroughs in this industry. The use of managers' perception of environment has been supported by a number of prior studies based on the relevance of such perception to the formulation of strategy as well as its accuracy with respect to objective measures of environmental conditions (Li et al., 2005).

6.5 Adequacy of Measures: Reliability, Validity, and Common method variance

We take several steps to assess the construct reliability and validity of all measures. As noted earlier, we pilot tested the survey with 14 founding members and top executives of 12 high-technology SMEs. In the questionnaire itself, previously validated measurement items are used to help ensure construct validity. Following the guidelines outlined by Anderson and Gerbing (1988) and Zhang and Li (2010), we first assess the reliability of the multi-item constructs with Cronbach's alpha. As shown in Table 6.1, the Cronbach's alpha for all scales are greater than the recommended threshold of 0.70 and the composite reliability of each construct were all above the generally recommended threshold of 0.70, indicating that the items of each construct are internally consistent and the scales are deemed reliable for further data analysis (Nunnally, 1978). Furthermore, as shown in Table 6.1, the KMO (0.853) and Barlett's test of sphericity (2791.605) are highly significant (p < 0.001), suggesting that factor analysis is suitable for this data.

Table 6.1 Construct Measurement and Factor Analysis Results

Item description summary	Cronbach α	Standardised Loading
Firm Performance (FP)		
AVE = 0.600 CR= 0.856	0.854	
1. Return on sales		0.810
2. Cash flow from market operation		0.790
3. Growth in profit		0.673
4. Return on assets		0.817
Technological Turbulence (TT)		
AVE = 0.671 CR= 0.858	0.849	
1. The technology in this industry is changing rapidly		0.769
2. Technological changes provide substantial opportunities in this industry		0.940
2. A large number of new product ideas have been made possible through technological breakthroughs in this industry		0.733
Market Orientation (MO)		
AVE = 0.539 CR= 0.902	0.899	
1. Our understanding of customers' needs is a source of competitive advantage		0.702
2. We are more customer focused than our competitors		0.750
3. We poll end users at least once per year to assess the quality of our products and services		0.773
4. Our business objectives are driven primarily by customer satisfaction		0.764
5. We measure customer satisfaction systematically and frequently		0.796
6. We have routine or regular measures of customer service		0.752
7. We continually monitor customers and competitors to find new ways to improve customer satisfaction		0.766
8. Data on customer satisfaction are disseminated at all levels in this business on a regular basis		0.540
Political Connections (PC)		
AVE = 0.631 CR= 0.870	0.866	
1. Spent much effort in cultivating personal connections with officials of government and its agencies		0.780
2. Maintained good relationships with officials of state banks and other governmental agencies		0.584
3. Devoted substantial resources to maintain good relationships with officials of administrative agencies		0.867
4. Spent a lot of money on building relations with the top officials in government		0.908

Model Fit Index

χ^2 = 358.365, p < 0.001; χ2/df = 2.455; GFI = 0.876; AGFI = 0.838; NFI = 0.875; TLI = 0.908; CFI = 0.921; IFI = 0.922; RMSEA = 0.075

Notes: a. AVE, average variance extracted; b. CR, composite reliabilities; K-M-O Measure of Sampling Adequacy = 0.853; Barlett's Test of Sphericity = 2791.605; P < 0.001.

Next, using AMOS 19.0 with maximum likelihood estimation, confirmatory factor analysis (CFA) is performed in order to assess unidimensionality, convergent validity, and discriminant validity of the multi-item constructs (Joreskog and Sorbom, 1993). A four-factor measurement model is examined, that is, technological turbulence, market orientation, political connection and firm performance are allowed to load only on their expected latent variables. It should be noted that the chi-square (χ2) likelihood ratio test is very sensitive to the sample size as well as the number of items and constructs in the model (Zhao et al., 2011). Hence, χ2/df and other fit indexes are used in this study. Consistent with previous research, the recommended cutoff line are used. For instance, the threshold for χ2/df ratio should be less than 3.0 or less than 2.0 in a more restrictive sense; Adjusted goodness-of-fit (AGFI) index should be over 0.80; Values of goodness-of-fit index (GFI), normed fit index (NFI), comparative fit index (CFI), incremental fit index (IFI), and Tucker-Lewis coefficient index (TLI) should be over 0.90 (Bentler and Bonnett, 1980; Hu and Bentler, 1999). Root mean square error of approximation (RMSEA) value should be less than or equal to 0.08 to indicate a reasonable fit of the model (Browne and Cudeck, 1993).

The results of a confirmatory factor analysis (CFA) indicate that the hypothetical model fits the data reasonably well (χ^2= 358.365, p < 0.001, χ^2/df = 2.455, GFI = 0.876, AGFI = 0.838, NFI = 0.875, CFI = 0.921, IFI = 0.922, TLI = 0.908, and RMSEA = 0.075), thereby confirming the unidimensionality of each construct in the model (Anderson and Gerbing, 1988). Although the values of GFI and NFI are slightly lower than the recommended value of 0.90, they are close to 0.90 and are deemed as acceptable (Bollen, 1989). As presented in Table 6.1, the standardised factor loadings of all items load significantly on their respective factors, with factor loading ranging from 0.540 to 0.940. All factor loadings are greater than 0.5. All the average variance extracted (AVE) for the study constructs are above 0.50 which is the threshold recommended by Bagozzi

and Yi (1988) and Fornell and Larcker (1981), thereby providing evidence of convergent validity.

As recommended by Fornell and Larcker (1981), discriminant validity is assessed by comparing the AVE of each construct with the variance shared between the constructs. Table 6.2 consists of the square roots of the AVE for each individual latent variable along the diagonal and correlation coefficients in the off-diagonal elements. The discriminant validity of a construct is adequate when the diagonal element is larger than each of the off-diagonal elements in the corresponding rows and columns (Hair, Black, Babin, Anderson, and Tatham, 2006). As shown in Table 6.2, the results satisfy those requirements. Thus, the results indicate that all shared variances are less than the AVEs, confirming a sufficient discriminant validity of all the constructs used in this study.

Since this study employs cross-sectional survey data and a single respondent from each firm, the data may introduce the potential of common method variance (Podsakoff, MacKenzie, Lee, and Podsakoff, 2003). Scholars recommend using both procedural and statistical methods to minimise the bias (Podsakoff et al., 2003). Regarding procedural methods, the respondents are assured of the confidentiality and anonymity to reduce their evaluation apprehension and '*make them less likely to edit their responses to be more socially desirable, lenient, acquiescent, and consistent with how they think the researcher wants them to respond*' (Podsakoff et al., 2003:888). Regarding statistical techniques, this study uses Harman's single factor test to check for the presence of the common method bias (Podsakoff and Organ, 1986). The analysis resulted in four factors with eigenvalues greater than 1.0, with the first factor accounting only for about 34.570% of the total variance. The results indicate that neither a single factor nor a general factor accounted for the majority of the convariance in the measures. In addition, following Podsakoff et al. (2003) and Zhang and Li (2010), this study employs

the latent variable approach by which the items are allowed to load on their theoretical constructs as well as on a latent common methods variance factor. Then the significance of the structural parameters both with and without the latent common methods variance factor in the measurement model is examined. The results indicate that all significant relationships are held after controlling for latent common methods variance factor and provide evidence that common method variance is not an issue in this study.

6.6 Data Analysis and Results

Table 6.2 presents means, standard deviations, correlations, and square roots of the average variance extracted (AVE) values. Table 6.3 presents the results of hierarchical multiple regressions. Model 1 includes only control variables. Model 2 includes the main effects of the presence of returnee entrepreneur, market orientation and political connection. Model 3 includes the interaction terms. The variance inflation factors (VIFs) associated with each of the regression coefficients are less than 2, which are well within the cutoff value of 10, a common threshold for acceptance, so multicollinearity is not a serious problem (Neter et al., 1985).

Table 6.2 Descriptive Statistics

Variables	Mean	S.D.	1	2	3	4	5	6	7	8
1. Firm size	5.281	0.912								
2. Firm ownership	0.735	0.442	-0.103*							
3. Firm age	11.981	4.485	0.293***	-0.090						
4. Returnees	0.190	0.395	0.096	-0.303***	0.076					
5. Technological turbulence	3.682	0.870	0.123**	-0.060	-0.090	0.149**	*0.819*			
6. Market orientation	3.831	0.782	0.366***	-0.010	0.064	0.073	0.352***	*0.734*		
7. Political connection	3.231	1.055	0.234***	0.078	-0.023	-0.086	0.109*	0.373***	*0.794*	
8. Firm performance	3.385	0.662	0.176***	0.185***	-0.011	0.022	0.131**	0.301***	0.445***	*0.775*

Note: N= 260

* $P < 0.1$ **$P < 0.05$ ***$P < 0.01$ (two tailed)

Diagonal elements (in bold and italic) are square roots of the average variance extracted (AVE) values and off-diagonal numbers are correlations between variables in this study.

Table 6.3 Results of Multiple Regression Analysis (N=260)

	Model 1		Model 2		Model 3	
	β	Std. Error	β	Std. Error	β	Std. Error
Constant	-1.860*	1.067	-1.249	1.010	-1.245	0.986
Controls						
Firm size	0.185**	0.076	0.052	0.073	0.055	0.072
Ownership	0.332**	0.143	0.342**	0.137	0.327**	0.134
Firm age	-0.010	0.014	-0.006	0.013	-0.005	0.013
Technological turbulence	0.074	0.062	0.015	0.060	0.014	0.059
Industry dummy	Included		Included		Included	
Predictors						
H1: Returnees			0.283*	0.150	0.331**	0.148
H2: Market orientation			0.105	0.066	0.149**	0.066
H3: Political connections			0.365***	0.061	0.227***	0.070
Interactions						
H4: Returnees × Political connections					0.420***	0.134
H5: Market orientation × Political connections					0.123**	0.053
F value	3.644***		6.834***		7.134***	
R^2	0.150		0.296		0.334	
Adjusted R^2	0.109		0.253		0.287	
ΔR^2	-		0.145***		0.038***	

Notes: ***$P<0.01$, **$p<0.05$, *$p<0.1$

Unstandardized coefficients reported

All hypotheses are tested based on Model 3, which has the full model specification. Hypothesis 1, proposing that the presence of returnee entrepreneurs will be positively related to high-technology SMEs firm performance, is strongly supported ($\beta = 0.331$, $p < 0.05$). Hypothesis 2 pertains to the effects of market orientation on firm performance. As shown in Table 6.3, market orientation is positively related to high-technology SMEs firm performance ($\beta = 0.149$, $p < 0.05$). Hypothesis 2 is strongly supported. Further, the regression coefficient for the political connection is positive and statistically significant ($\beta = 0.227$, $p < 0.01$), indicating that the political connection is an effective approach to boost high-technology SMEs performance in the Chinese context, in line with Hypothesis 3.

Hypothesis 4 predicts that the positive relationship between returnee entrepreneurs and high-technology SMEs firm performance will be stronger when the political connection is higher. This hypothesis is strongly supported because the coefficient for the interaction of returnee entrepreneur and political connections is positive and statistically significant ($\beta = 0.420$, $p < 0.01$). To facilitate interpretation of these findings, this study plots this moderating effect in Figure 6.2 by following the procedure suggested by Aiken and West (1991). The interaction effect illustrated in Figure 6.2 suggests that, for high-technology SMEs, the influence of returnee entrepreneurs on SMEs firm performance would be greater with higher political connections than a lower one.

Hypothesis 5 postulates that positive relationship between market orientation and high-technology SMEs firm performance will be stronger as the political connection is higher. The coefficient for the interaction of market orientation and the political connection is positive and statistically significant ($\beta = 0.123$, $p < 0.05$). Thus, Hypothesis 5 is supported. The result indicates that the political connection positively moderates the relationship between market orientation and performance in Chinese

high-technology SMEs. Following a similar procedure as described above, the moderating effect of the political connections on the relationship between market orientation and firm performance are depicted in Figure 6.3. As shown in Figure 6.3, the positive relationship between market orientation and firm performance is stronger when the level of political connection is higher, providing further evidence for supporting Hypothesis 5.

The results in Table 6.3 also shows that firm size and firm ownership have significant effects on firm's new product performance in Model 1. Filatotchev et al. (2011) suggest that large firms are capable of commercialising their innovation and achieving high new product sales. Hence, large firms are more likely to have better firm performance. Furthermore, compared with state-owned enterprises (SOEs) or other collectively owned enterprises, privately owned enterprises in high technology industry tend to perform better in terms of firm performance. The results are consistent with previous research (Li and Zhang, 2007; Zhang et al., 2009). In terms of firm age, it is negative, but insignificant. This result indicates that firm age plays a less important role in high-technology SMEs' firm performance than firm size and ownership. In addition, industry dummy variables are not significant, indicating that firm performance of sample firms is not industry driven (Liu, et al., 2010). The addition of the interaction terms in Model 3 also increases the R-square compared with Model 2, in support of the significant moderating effects of political connections.
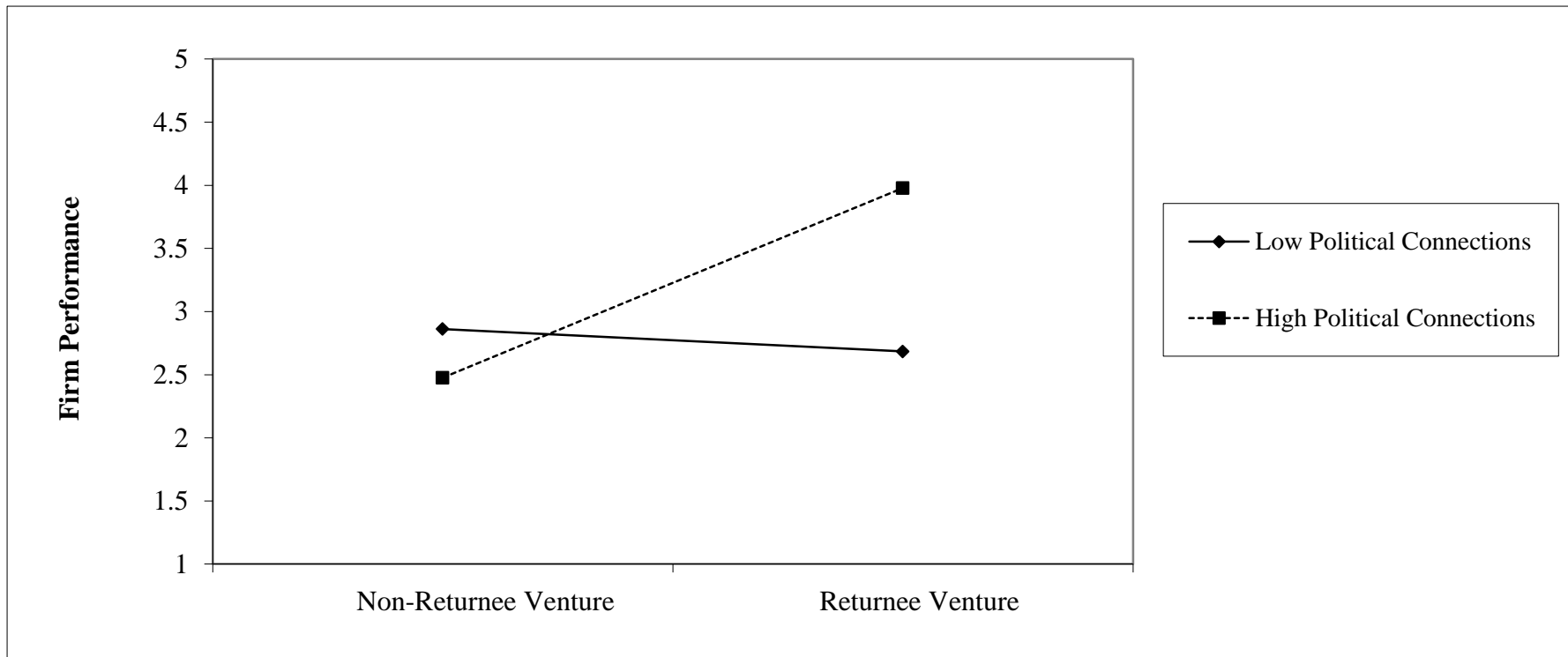
Figure 6.2 Returnee entrepreneur and firm performance – the moderating role of political connections
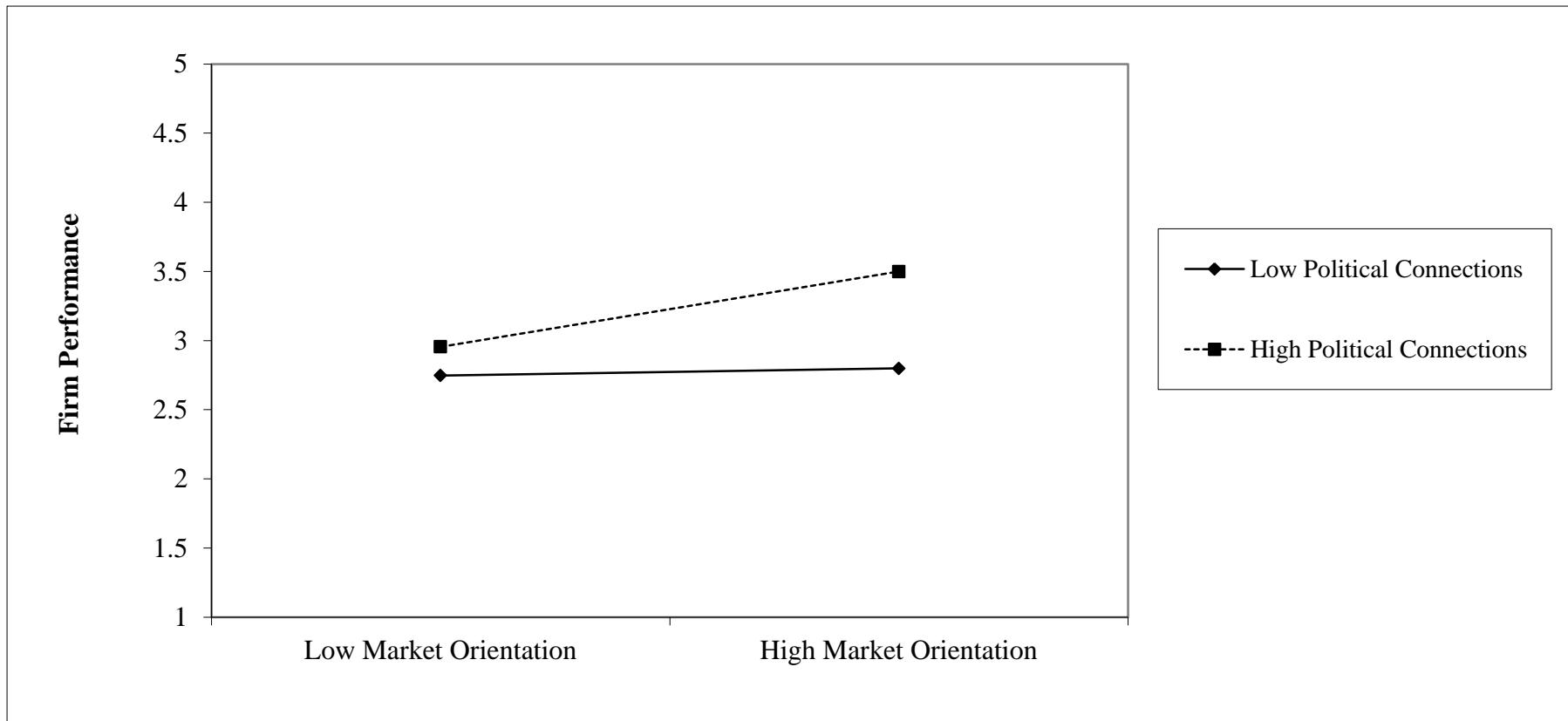
Figure 6.3 Market orientation and firm performance – the moderating role of political connections

6.7 Discussion

With survey data obtained from a sample of SMEs in China's high-technology industries, this study examines simultaneously the effects of returnees, market orientation and executives' political connections in firm performance. In addition, this study examines the moderating role of political connections in returnees, market orientation and performance linkage.

Our result shows that there is a significant positive association between the presence of a returnee entrepreneur and the performance of high-technology SMEs, as predicted in H1. It indicates that returnee ventures tend to outperform its local rivals, and that knowledge embedded in returnee entrepreneurs plays a critical role in enhancing the performance of their firms. Our result is consistent with prior studies which tend to suggest returnee ventures have a higher level of innovation-focused managerial mindset that levers the unique entrepreneurial competence and maximises firm performance (Dai and Liu, 2009). Relative to their local counterparts, Chinese returnee entrepreneurs are found to have particular advantages in terms of advanced technological and innovative knowledge through higher education and working in developed countries (Li et al., 2012; Wang and Lu, 2012). For example, Vanhonacker et al. (2006) found that 80 percent of returnees in their study have a technology that is new for China, enhancing returnees' competitive advantage in the domestic market. Furthermore, returnees to emerging markets such as China may bring expertise relating to commercialisation, and also knowledge about products, technology, as well as access to external funding from venture capital firms (Wright, Liu, Buck and Filatotchev, 2008). In addition, experiences in both developed countries and their home countries, expose returning entrepreneurs to the technological and business practice gaps between these country contexts; exposure to the gaps enables returnees to identify entrepreneurship and

innovation opportunities (Li et al., 2012), thus boosting high-technology SMEs firm performance.

Our finding that market orientation is significantly and positively related to firm performance shows that such orientation enable high-technology SMEs in the Chinese emerging economy to satisfy customer needs and, consequently can obtain superior firm performance. This result further supports the previous studies (e.g., Baker and Sinkula, 2009; Kara et al., 2005), which noted that market orientation positively contributes to a firm's performance. With the rapid development of the Chinese economy and the opening of Chinese markets, more and more top managers of Chinese SMEs face competitive pressures and consequently understand the importance of proper market positioning in gaining competitive advantage and improve firm performance (Li et al., 2008). In high-technology industries, which are labelled as high growth, high margin and high value added, SMEs with a strong market orientation can better leverage their advantages of simpler organisational structure, flexibility, adaptability, capacity for speed, as well as propensity for innovation (Pelham, 2000). In particular, a strong market orientation can help channel SMEs in high-technology industry toward the right opportunities (Baker and Sinkula, 2009). Thereby, market orientation may reflect the need for Chinese SMEs in high-technology industry to focus on maximising customer satisfaction since they lack the economies of scale to compete with larger competitors on a price basis (Lonial and Carter, 2013).

Further, given their limited experience and knowledge, Chinese customers' demands and preferences change rapidly due to the fast-changing nature of market environments in transitional economies, which makes their needs unpredictable (Gao et al., 2007). Under such circumstances, as in the case of Gatignon and Xuereb (1997), market orientation can drive high-technology SMEs to identify and respond to consumer needs

194

in a timely manner. Although an incomplete market system increases the risk of high-technology SMEs' operations, SMEs with market orientation can capitalise on opportunities in the turbulent environment of transitional economic conditions, which in turn boost their firm performance (Li et al., 2008). Therefore, this study further reinforces that market orientation is an important antecedent of high-technology SMEs firm performance in Chinese emerging market.

This study examines the direct effect of top managers' political connections on firm performance of SMEs in high-technology in China. As expected, we found that managers' political connections are significantly associated with firm performance. This finding is consistent with other studies of emerging and transitional economies (e.g., Li and Zhang, 2007; Peng and Luo, 2000; Xin and Pearce, 1996). Because SMEs face the liability of smallness and government still maintained control over a significant portion of scarce resources, political connections may help SMEs get preferential access to valuable market information, fewer bureaucratic delays, both monetary and non-monetary incentives in terms of getting tax reductions and obtaining land, and licenses (Wang and Chung, 2013).

In particular, political connections help high-technology SMEs obtain critical regulatory resources. First, political connections provide SMEs with crucial access to government policy and aggregate industrial information (Hillman, Zardkoohi and Bierman, 1999). It should be noted that governments in emerging economies such as China guide economic activities by devising high-technology industry development plans and setting regulatory policies (Sheng et al., 2011). Such policy and industrial information, to some extent, determines the trend of technology development at the industry level. For Chinese high-technology SMEs with limited resources, they can ill afford to fail in any of R&D investment in a turbulent environment. It can be argued that knowing the future

development of new technology could offer high-technology SMEs possible business opportunities.

Given the weak institutional arrangements in China, cultivating political connections helps high-technology SMEs to seek protection in situations of uncertainty (Li and Atuahene-Gima, 2001). Prior research has noted that managers should counteract their formal structural disadvantages and defend themselves against threats like appropriation or extortion by building good connections with government officials in transitional and emerging economies such as China (Xin and Pearce, 1996). Because of weak property rights protection, firms engage in widespread opportunistic and unlawful behaviour (Nee, 1992; Peng and Heath, 1996). The intellectual property rights of SMEs in high-technology industries resulting from product innovation may go unprotected, making production innovation a highly risky and less profitable strategy (Li and Atuahene-Gima, 2001). Although Chinese domestic enterprises have realised the value of protection of intellectual property and firm assets, legal enforcement in China is still spotty and subject to alliances with powerful individuals and organisations, particularly in certain localities in China (Ahlstrom and Bruton, 2002).

In addition, political connections may enhance SMEs' political legitimacy or the extent to which government officials or agencies assume that the focal SMEs' actions and behaviours are desirable and proper (Suchman, 1995). Chinese firms with political connections with governments can gain political legitimacy by obtaining positions in parliament, which in turn helps firms receive exclusive government endorsements and favourable treatment (Sheng et al., 2011). As previous research (e.g. Li et al., 2008) contends, good connections with the government help Chinese SMEs to overcome legal and institutional failure and ideological discrimination against private ownership.

Therefore, managers build good network ties with government officials can improve their firm performance of high-technology SMEs in China's emerging economy.

Our results suggest that returnee entrepreneurs with high levels of political connections are more likely to add additional advantages for high-technology SMEs in China, and consequently boost firm performance. This finding seems to corroborate recent arguments that the managers' links with the government seem to be a performance enhancing strategy (Chung, 2011; Li, Zhou and Shao, 2009; Sheng et al., 2011). This result can be attributable to the characteristics of emerging and transitional economies. Small entrepreneurial firms, especially returnee ventures, generally lack legitimacy and government protection, and thus they are in a relatively weak position in an emerging and transitional market (Nee, 1992). Given the inadequate legal framework that protects property rights in an emerging economy, returnee's advanced technological knowledge and experience may not necessarily be transformed into better performance because their superior technologies or products can be illegally imitated by competitors. Further, when returnees return to their often transitioning and fast changing home countries, their lack of local knowledge and local connections are likely to cause them to suffer from a liability of foreignness (Li et al., 2012). Thus, building political connections with the government may serve as an effective mechanism that assists returnee ventures to mitigate their disadvantages in their home country.

Our results also indicate that market orientation when coupled with a higher level of political connection may be even more effective in generating superior firm performance than market orientation alone. The key to a market orientation lies in the firm's ability to explore and use market information to create and deliver superior customer value (Li, 2005). In such cases, building political connections with government officials and agencies may enable SMEs in high-technology industry to

acquire unpublished market intelligence controlled by government agencies, which may facilitate the implementation of a market orientation strategy to achieve a higher level of customer satisfaction and consequently generate superior firm performance (Luo et al., 2008). Without such market information, high-technology SMEs may be less likely to outperform their rivals in China's emerging market given their resource constraints and the corresponding inability to recover from potential financial losses often associated with risky endeavours (Lonial and Carter, 2013). In addition, because the government in China might have approval authority for access to certain markets, high-technology SMEs with limited resources need to build close ties with government officials to gain permission to target their niche market. Thus, market-oriented SMEs in high-technology industry with a high level of political connections are suggested to be more likely to achieve superior firm performance.

Taken together, these findings suggest that a synthesis of resource-based view, social capital, and institution-based view offers a good understanding of firm performance of high-technology SMEs in the context of China. In particular, our study further reinforces the proposition that returnee presence, market orientation, and political connections are an important antecedences of firm performance in an emerging and transitional market.

6.8 Contributions

The present study contributes to the understanding of determinants of firm performance of high-technology SMEs from emerging economies in several ways. First, it provides a better understanding of the entrepreneurial firms in an emerging market such as China, in contrast to much of the literature which has mostly focused on developed economies. Relative to their counterparts in market economies, entrepreneurial firms such as high-technology SMEs in emerging and transitional markets face more constrained

conditions because the legal institutional framework and strategic factor markets have not been well developed (Li and Zhang, 2007). This study contributes to this line of research by empirically demonstrating how different types of managerial resources are associated with firm performance in an emerging economy.

Second, it contributes to the emerging literature by considering the key role of human mobility as represented by returnee entrepreneurs in the development high-technology SMEs in China. Different from extant studies that have focused on the role of returnee entrepreneur in firm export and innovation, this research extends previous literature by examining returnees' impact on firm performance of SMEs in high-technology industry in China. The overall positive relationship between returning entrepreneurs and firm performance suggests that, in the Chinese context, returnee presence adds additional advantages, and thereby generating superior performance.

Third, our study further reinforces the proposition that market orientation is positively associated with firm performance in an emerging economic environment. Superior performance requires smaller entrepreneurial firms to listen to their customers' manifest needs and respond by fine-tuning their brand and product lines to achieve a higher level of customer satisfaction (Baker and Sinkula, 2009). Thus, in extending previous research, this study examines whether and how market orientation influence firm performance in the context of Chinese high-technology SMEs.

Finally, by incorporating the institutional networking component into existing entrepreneurship literature, this study helps to improve our understanding of the impact of political connection on firm performance of high-technology SMEs in emerging economies. Our results demonstrate that, in China, high-technology SMEs with a high-level of political connection are more successful than those without. More importantly, this study contributes to the literature through testing the moderating effects of political

connections in an emerging and transitional economy. Our finding suggests that political connections help returnee ventures mitigate their disadvantages in terms of a lack of local connections and understanding of their home countries, and consequently outperform their local rivals. In this aspect, this study makes an effort to examine how returnees and political connections interact to affect firm performance, and thus fills a significant gap in extant literature (Gulati, 2007). Also our empirical evidence from our study confirms that political connections can be used as a moderator between market orientation and firm performance. That is, small market oriented firms with close ties with the government agencies are more likely to obtain market information or gain permission to enter certain market, which in turn help SMEs survive and develop in a transitional economic environment.

6.9 Managerial Implications

The findings from this study provide some important implications for policy makers and practitioners. For policy makers, it is important that the government provides more economic and political incentives aiming at attracting returnees to go back to their home countries for exploiting entrepreneurial opportunities. While Chinese government has offered preferential policies (e.g. The Thousand People Plan) with the aim of attracting more and better returnees back to China, it is still insufficient that government policies and reforms help returnee ventures develop their firm performance. Thus policy makers from emerging economies need to formulate a set of effective and viable policies that assist high-technology SMEs in achieving business success.

For managers, our findings help them understand market orientation is the backbone for firms survive and develop in a transitional economic environment. Managers of the small firms should strive to develop appropriate market orientation to perform activities geared to maximising customer satisfaction and consequently enhance their firm

performance. However, it should be noted that, in emerging economies like China, customers' needs and demands may change rapidly due to the often transitioning and fast changing home markets. SMEs should be aware of the limitations of a market orientation and plan meticulously to channel resources toward the right opportunities.

Our study highlights the important role of political connections in improving high-technology SMEs firm performance. As the government in emerging markets still control the key resources, political connections may present a conduit for entrepreneurial ventures to access market information, knowledge, and opportunities that are unavailable internally. Further, political connections can help returnees mitigate their disadvantages, as well as assist managers of SMEs in obtaining important market information in order to better serve their customers and consequently achieve superior firm performance. However, the prevalence of political networking in practice demonstrated that government officials still intervene in firms' business operations and market development. Managers should be cautious about the possible negative effects of political connections with government agencies. For example, due to the high cost of establishing and maintaining political connections with government officials, the top management of a SME may have less time and energy for the formulation and implementation of the market orientation, which may damage their customer trust (Chung, 2011). The unconstrained establishment of political connections may drain a small firm's limited financial and labour resources, which in turn diminishing firm performance. It should be noted that the ultimate goal of China's reform is to deregulate its economy and establish a free and open market system (Sheng et al., 2011). Thus, modern Chinese firms are encouraged to be truly market-oriented and build their market-related competitive competences in order to capture the emerging market opportunities in these economies (Li and Zhang, 2007; Luo et al., 2008).

6.10 Limitations and Future Research

This study is subject to several limitations, which also provide fertile avenues for further research. First, the study is cross-sectional and hence does not allow for causal interpretations among the variables. For example, it may be difficult to use cross-sectional data for detecting the potential endogeneity between firm performance and political connections which are arguably seen as resource-consuming activities. Future studies should be conducted on this issue by using a longitudinal research design. Kraatz and Zajac (2001:653) have suggested a useful approach, 'of first identifying historically valuable resources and subsequently examining their impact over time in a changing environment context'. Using this approach, future research could be enabled to investigate how the different resources change and evolve in the process of economic transition.

Second, the constructs in the study are measured by using perceptual self-reports. For example, it has been observed that managers in Chinese SMEs in general are generally reticent to disclose their financial performance and report details on assets as well as profitability. Thus, our study is constrained by the lack of detailed firm-level financial data. As Li and Atuahene-Gima (2002) suggest, it is likely that using retrospective data will pose such potential problems as limited recall of the respondents and biased perceptions of past realities. Future research may enrich financial measurements of firm performance, such as absolute value of sales.

Finally, our sample is limited to high-technology SMEs in China. Despite emerging economies share some common features in their market and institutional environments, they differ significantly in the stages of their economic and institutional development, as well as in cultural contexts (Sheng et al., 2011). It should be cautious to generalise the results of this study to other emerging economies. In particular, future research may

investigate whether and how returnee presence, market orientation and political connections help entrepreneurial firms overcome market and institutional hurdles in other emerging and transitional markets, such as Russia, India, and Brazil.

In addition, external networks may consist of different cultural and institutional constituents across nations, and their influence may depend on different national contexts. For example, political connections are not a unique feature of emerging economies; firms in developed countries, including the United States and Western European countries, are also politically connected (Faccio, 2006; Nee and Opper, 2010). The U.S. government playing a highly significant role in the current financial crisis is a case in point (Sheng et al., 2011). Future research may provide comparative evidence to examine and document the relationship among political connections, external environment, and their performance in both developed and emerging economies.

In conclusion, this study examines the effects of returnee presence, market orientation and political connections on SMEs firm performance across different institutional contexts in China's high-technology industries. We believe that our findings contribute to our understanding of the effect of various antecedents of high-technology SMEs firm performance in the context of an emerging market.

Chapter 7

Entrepreneurial Orientation, Ties with Service Intermediaries, Institutional

Support and Firm Performance: Evidence from High-Technology SMEs in an

Emerging Market

7.1 Introduction

Recently, scholars are paying more attention to strategies and the performance of technology-focused entrepreneurial firms and their role in promoting industrial development since they are expected to play a greater role in economies as they develop (Stinchcombe, 1965; Oviatt and McDougall, 1994). It seems that new technology ventures suffer from the liability of smallness and newness, because they often lack adequate knowledge of their environments, new product development experience, as well as managerial and financial resources (Shan, 1990; Zahra and Covin, 1993). Relative to their counterparts in Western market economies, high-technology small and medium-sized enterprises (SMEs) in emerging markets may face not only resource limitations, but also other daunting challenges with regard to intense uncertainty, turbulent environments, as well as the increasing pressure to compete and innovate (Tan, 1996).

The literature suggests that SMEs need to effectively deploy firm resources to develop competitive advantage and to achieve better performance (Barney, 1991; Day and Wensley, 1988). As Lee, Lee and Pennings (2001) claim, technology-based SMEs should pursue entrepreneurial strategies that focus on the accumulation of intangible resources for survival and growth. Previous studies posit that top managers' strategic orientation as a unique managerial resource reflects a firm's strategic focus in terms to creating behaviours that help it achieve superior performance (Gatignon and Xuereb,

1997). Specifically, entrepreneurial orientation, also referred to as entrepreneurial strategy making or entrepreneurial posture, can be seen as an extension of the concept of entrepreneurship from the individual level to the organisational level that embraces the range of activities firms engage in to formulate and enact their strategic missions and goals (Covin and Slevin, 1989; Lee et al., 2001; Li, Zhang and Chan, 2005; Lumpkin and Dess, 1996). Lots of studies suggest that entrepreneurial orientation is a key determinant of firm performance. However, some studies indicate that the proposed positive relationship between entrepreneurial orientation and performance does not exist (Covin and Slevin, 1989) or at best is very weak (Lee et al., 2001; Li, Zhang and Chan, 2005). The inconclusive findings likely suggest that '*simple relationships may be inadequate to explain the relationship between entrepreneurial orientation and performance*' (Dess et al., 1997: 678). Further, due to technology-focused SMEs' short history and limited resources, it is not surprising that the extant literature has emphasised the important role of managers' social capital represented as external ties in SMEs' innovation and firm performance, presumably because external ties can help SMEs overcome resource constraints (Zhang and Li, 2010).Taken together, these managerial resources are instrumental in helping high-technology SMEs exploit external opportunities and enhancing their firm performance in a transitional economic environment.

In addition, the majority of previous studies have treated institutional factor as background (Peng, Wang and Jiang, 2008). This may represent a research gap, as institutions in emerging markets differ drastically from those in market economies (Meyer and Peng, 2005; Shenkar, 2005). The role of institutions is more salient in emerging and transitional markets because the rules are being fundamentally and comprehensively changed, and the scope and pace of institutional transitions are unprecedented (Peng, 2003). Furthermore, it seems that the emergent literature

emphasizes that institutions shape the entrepreneurial decisions and behaviours for firms from emerging markets (Child and Rodrigues, 2005; Peng, 2003; Peng and Heath, 1996). However, this proposition needs more empirical supports. Hence, it is worth to examining how and in what manner institutions in emerging economies such as institutional support shape the entrepreneurial strategies and performances of SMEs in high-technology industry.

Thus this study aims to address two research questions: (1) How are entrepreneurial orientation, ties with service intermediaries and institutional support related to high-technology SMEs firm performance in an emerging economy such as China? (2) How and in what manner the contingent factors such as ties with service intermediaries and institutional support affect the performance implication of entrepreneurial orientation? This study tends to provide a deeper understanding of firm strategy and performance in the context of Chinese SMEs in high-technology industry. The conceptual framework is provided in Figure 7.1.
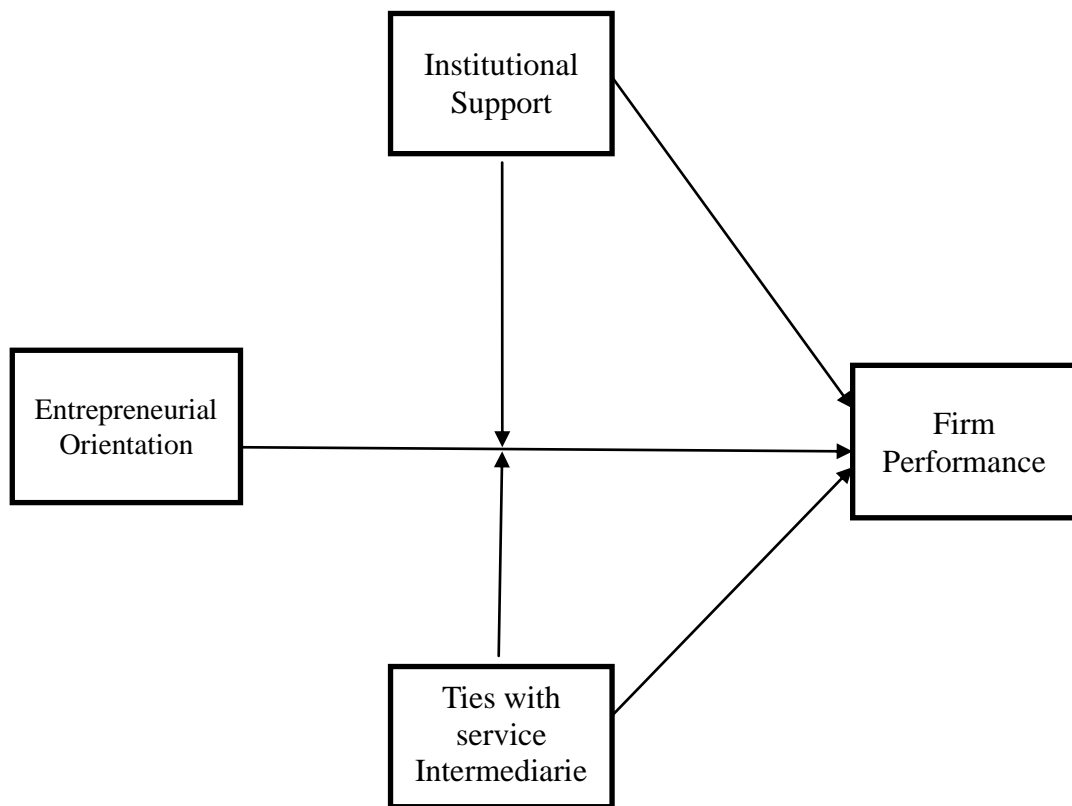
Figure 7.1 A conceptual model of entrepreneurial orientation, ties with service intermediaries and institutional support in high-technology SMEs firm performance in an emerging market

We argue that this study contributes to the existing literature in a number of ways. First, it extends extant literature by understanding the determinants of firm performance of entrepreneurial firms, especially high-technology SMEs, from emerging markets (Lee et al., 2001; Peng, 2003; Li and Atuahene-Gima, 2001). This paper adds empirical evidence by examining how and in what manner entrepreneurial orientation, managers' ties with service intermediaries, and institutional support affect the firm performance of SMEs in high-technology industry in China. It fills a research gap in existing studies that have taken the shift from developed economies to emerging economies such as China. Second, this study also supports the recent recognition of the new phenomenon

that the role of ties with service intermediaries will be crucial to impact on entrepreneurial activities of high-technology SMEs in emerging economies. Third, we provide empirical evidence to reinforce the proposition that institutional support is not just an environmental background, but plays an important role in shaping and affecting entrepreneurial strategies and performance in emerging economies.

More important, this study provides empirical evidence to demonstrate that entrepreneurial orientation is an important constituent for various dimensions of organisational success (Tang et al., 2008). In addition, through examining the moderating role of ties with service intermediaries and institutional support in the relationship between entrepreneurial orientation and high-technology SMEs firm performance, this study may enrich our knowledge of how to translate entrepreneurial orientation into higher performance (Su, Xie, and Wang, 2013). This represents a response to the call by Lumpkin and Dess (1996) which suggests that the contextual variables such as organisational and environmental factors should be considered in studying the performance implication of entrepreneurial orientation.

Our main theoretical argument is the firm performance of high-technology SMEs in emerging economies depends on entrepreneurial orientation, ties with service intermediaries, and institutional support. Further, due to the unique market and institutional environments in emerging economies such as China, ties with service intermediaries and institutional support exert an influence on the effectiveness of entrepreneurial orientation in affecting firm performance. Therefore, the research here provides a more comprehensive knowledge about high-technology SMEs in the context of emerging economies.

The remainder of this paper is organised as follows: First we discusses the theoretical background and develop hypotheses. Next we describe our variables used in this study.

Finally, we present the research findings, contributions, implications, limitations and future research directions.

7.2 Theoretical Background and Hypotheses

7.2.1 The Resource-Based View (RBV)

The RBV regards the firm as a bundle of resources and suggests that their attributes significantly affect the firm's competitive advantage and, by implication, its subsequent performance (Barney, 1991; Wernerfelt, 1984). The RBV posits that firm-specific resources that are rare, valuable, inimitable and non-substitutable represent the main source of competitive advantage (Barney, 1991). In this sense, the firm's internal resources constitute a much more stable point of reference and develop as primary sources of benefit and crucial determinants in the formulation of the organisational strategy (Grant, 1991). Previous studies have suggested that a firm's competitive advantage stems from its intangible resources and capabilities which are difficult to imitate and slow to develop (Barney, 1991; Peteraf, 1993). Taking this into account, the RBV has recently been used to identify the range of factors (intangible resources and capabilities) that affect firm performance of SMEs in both developed and emerging markets (Lee et al., 2001; Li and Atuahene-Gima, 2001; Wiklund and Shepherd, 2003). Among various intangible assets that a firm possesses, organisational orientations are considered some of the most important because these skills sets are deeply ingrained into the firm's daily routines and, as such, are impossible for competitors to copy (Lonial and Carter, 2013). Whereas firms may pursue different types of organisational orientations, previous studies have particularly pointed out the importance of entrepreneurial orientation, which contributes to superior firm performance. Therefore, firms that effectively deploy these organisational resources are more likely to achieve better performance in the marketplace.

Entrepreneurial Orientation and High-Technology SMEs Firm Performance

In accordance with RBV, idiosyncratic internal resources define an organisation's competitive advantage. Entrepreneurial orientation can be regarded as organisational resources that provide sustainable competitive advantages, since entrepreneurial orientation is embedded in organisational routines, is intangible, as well as is not tradable (Lee et al., 2001). As Miller (1983:771) summarises, '*an entrepreneurial firm is one that engages in product-market innovation, undertakes somewhat risky ventures, and is first to come up with proactive innovations, beating competitors to the punch*'. Such characteristics are associated with improved firm performance in today's business environment where product and business model life cycles are shortened (Hamel, 2000), and where the future profit streams from existing operations are uncertain and firms have to strive to constantly seek out new business opportunities (Wang, 2008). Entrepreneurial orientation refers to the 'processes, practices, and decision-making activities that lead to new entry' (Lumpkin and Dess, 1996). It reflects that a managerial willingness to innovate to rejuvenate market offerings, take risks to try out new and uncertain products or services, and proactively identify and exploit new marketplace opportunities (Wiklund and Shepherd, 2005).

Entrepreneurial orientation consists of three dimensions: proactiveness, innovativeness, and risk-taking (Covin and Slevin, 1991; Miller, 1983). The component of proactiveness reflects the process of '*seeking new opportunities which may or may not be related to the present line of operations, introduction of new products and brands ahead of competition, and strategically eliminating operations which are in the declining stages of life cycle*' (Venkatraman, 1989: 949). With proactiveness, firms are likely to control the market by dominating distribution channels and establishing brand recognition (Wiklund and Shepherd, 2005). Proactivenss entails a forward-looking

perspective to find new business opportunities, grasp them quickly to obtain the first-movers advantage, and thereby garnering usually better performance (Su et al., 2011a).

The component of innovativeness refers to the tendency to engage in and support new ideas, novelty, experimentation, and creative processes such as R&D activities that may result in new products, services, or technological processes (Lumpkin and Dess, 1996). Innovative posture may facilitate the use of new approaches to capture emerging opportunities brought about by changes in external environment (Covin and Slevin, 1989). Further, through innovation, firms likely differentiate themselves from others and give rise to competitive advantage, and consequently generating superior firm performance. In particular, high-technology SMEs need to be innovative so as to support creativity and experimentation in new product development, technology adoption, and internal processes and procedures, thereby departing from established technologies and practices (Baker and Sinkula, 2009)

The component of risk-taking propensity refers to a willingness to make a large resource commitment, where the cost of failure may be high and the outcomes are unknown (Wiklund and Shepherd, 2005). It also reflects that the firm is willing to break away from the tried-and-true and venture into the unknown (Wiklund and Shepherd, 2005). Further, risk-taking aids to embark on proactive and innovative initiatives to alter the competitive landscape in existing market (Atuahene-Gima and Ko, 2001; Covin and and Slevin, 1991).

Entrepreneurial orientation has been argued to be positively associated with firm performance because it may assist companies to gain from first-mover advantages and capitalise on new opportunities in the marketplace (Covin and Slevin, 1991; Li, Zhang and Chan, 2005). For instance, firms with entrepreneurial orientation may target premium market segments, charge high prices and skim the market ahead of their rivals

(Zahra and Covin, 1995). Further, entrepreneurial orientation provides SMEs the ability to identify new opportunities that can differentiate them from other firms and create a competitive advantage, thereby attaining superior organisational performance (Wiklund and Shepherd, 2003, 2005). In addition, Rauch, Wiklund, Lumpkin, and Frese (2009) undertake a meta-analysis exploring the magnitude of the relationship between entrepreneurial orientation and firm performance across extant literature, suggesting that businesses are likely to benefit from pursuing an entrepreneurial orientation.

It should be noted previous studies on entrepreneurial orientation are mainly limited to firms operating in Western developed economies, but little research has been undertook in China, which is the largest and the fastest growing emerging economy in the world (Li, Zhang and Chan, 2005; Zhou and Li, 2007). As research horizon is now increasingly expanded to emerging economies, it is critical to know more about 'what is going on there' to make the field of entrepreneurial orientation be globally relevant (Peng, 2003; Meyer, 2006). Further, as emerging economies develop and reform their economic systems from closed-market, centralised, state-planning business approaches toward greater market orientation and autonomy, firms in emerging economies will need higher levels of entrepreneurial orientation to changes their strategies, learn global best practices, or develop technological advancements to respond more competitively to market forces and customer demands (Zhao, Li, Lee, and Chen, 2011). In particular, China is suffering from institutional transitions, that is, 'fundamental and comprehensive changes introduced to the formal and informal roles of the game that affect organisations as players' (Peng, 2003:275). Moreover, it seems that previous studies only target established firms or state-owned enterprises (SOEs) even though the research focus is on China (Tan and Tan, 2005). For example, Luo (1999) found that township and village enterprises (TVEs) [1] with innovativeness and proactiveness may

attain superior profitability and market position. Risk-taking, however, is not contributing to firms' financial or market performance.

Also, Su et al. (2011a, 2011b) demonstrate that entrepreneurial orientation is positively associated with firm performance in the context of established firms in manufacturing industry. It can be argued that focusing on high-technology SMEs in China may provide a good threshold to probe deep into the values of entrepreneurial orientation in emerging markets. Overall, with entrepreneurial orientations, Chinese high-technology SMEs may identify and capture transient market opportunities and bear the uncertainties resulted from transitional environments, thereby creating superior firm performance. Thus, we hypothesise:

Hypothesis 1: *Firm performance of high-technology SMEs in emerging markets is positively associated with entrepreneurial orientation.*

Ties with Service Intermediaries and High-Technology SMEs Firm Performance

Social capital has been gaining prominence as an intricate concept that provides a foundation for describing and characterising a firm's set of relationships (Inkpen and Tsang, 2005), and has been defined from different perspectives (Adler and Kwon, 2002; Burt, 1997; Portes, 1998). For this study, social capital refers to '*the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit*' (Nahapiet and Ghoshal, 1998: 243). According to social capital and network theory, economic actions are deeply embedded in interpersonal connections, and managers can use the social capital inherent in their managerial ties influence the allocation of resources and shape economic actions (Batjargal, 2003; Coleman, 1988; Granovetter, 1985; Uzzi, 1997). As noted by Luo (2003), one common feature permeating emerging economies is the existence of a high degree of institutional voids and uncertainties resulting from a lack

of market supporting institutions. Under such structural turbulence, firms, especially technology-based SMEs, encounter problems and uncertainty with which they are not capable of coping alone (Tan and Tan, 2005). As a result, managerial networking can work as substitutes for reliable government and the established rule of law in emerging markets (Xin and Pearce, 1996).

Arguably, high-technology SMEs can expand and nurture managerial linkage with larger and powerful players in order to overcome resource constraints and establish legitimacy. However, most entrepreneurial SMEs are still struggling to develop the essential networks to fulfil their goals (Tang et al., 2008; Peng and Ilinitch, 1998). Specifically, high-technology SMEs with limited internal resources may only benefit from their immediate personal contacts such as networks with their previous business partners (e.g., major clients or suppliers) or some government officials given the extensive involvement of the government in transitional economies (Peng, 2003; Park and Luo, 2001). Given these constraints, it is crucial for technology-focused SMEs to balance the needs and the costs of information search so as to accomplish their entrepreneurial strategies in a turbulent transitional environment (Tushman and Nadler, 1978). As a result, indirect linkages may be an effective way for small technology ventures to enjoy the benefits of network size without paying the costs of network maintenance (Ahuja, 2000).

It also should be noted that high-technology SMEs generally located within technology clusters or science parks, where may provide entrepreneurs with physical facilities and professional services as well as links to laboratories, scientists, and access to government subsidies, customers, suppliers, and employees that may not otherwise be available to them directly (Wright, Liu, Buck and Filatotchev, 2008). In those clusters, in addition to direct inter-firm linkages, firms are also locally connected with regional

institutions, which act as network intermediaries to provide specific support services and facilitate information exchange among residing firms (McEvily and Zaheer, 1999). Similarly, Saxenian (1990) claim that Silicon Valley is not only distinguished by the concentration of skilled labour and companies, but also by a variety of regional institutions embracing Stanford University, trade associations, and a myriad of specialised consulting, market research, public relations, as well as venture capital firms. These regional institutions as intermediaries can help residing SMEs collect and process information, thereby facilitating knowledge exchange between firms (Ahuja, 2000). In general, service intermediaries can perform a variety of functions in innovation, consisting mainly of communication, foresight and diagnostics, information scanning and gathering, knowledge processing and combination, evaluation of outcomes, and technology commercialisation (Howells, 2006). Arguably, if a high-technology SME has close ties with service intermediaries, the specialised network role of service intermediaries may enable the firm to plug into the networks in the cluster, through which the firm becomes connected with various parts of the social system of the cluster (Zhang and Li, 2010). Through collaboration with service intermediaries, high-technology SMEs are likely to reduce the amount of time and investment required to gather external information and knowledge (Shane and Cable, 2002). Reduced search cost can further allow high-technology SMEs to dedicate more resources to innovation and quicken the process (Zhang and Li, 2010). As Bahrami and Evans (1995: 68) observed, a sophisticated service infrastructure allows new SMEs in high-technology industry to '*focus on their chosen steeple of expertise rather than dissipate their energies across a broad range of peripheral or supporting activities*'.

Focusing on China, this study highlights four specific types of service intermediaries, including technology service firms, accounting and financial service firms, law firms, and talent search firms. As noted in previous research, these service intermediaries may

offer Chinese high-technology SMEs directory information, networking opportunities, and intermediary introduction, which help those SMEs better establish and develop a more aligned interdependence between innovation and other supporting activities (Zhang and Li, 2010). In addition, some intermediary institutions might be supported or funded by the Chinese government, aiming to provide innovation support for firms, especially for SMEs (Zeng, Xie and Tam, 2010). As building networks has been an important strategy for Chinese SMEs to ameliorate their resource constraints, the service intermediaries are believed to promote entrepreneurial activities and contribute to superior firm performance. Therefore, this study proposes the following baseline hypothesis:

Hypothesis 2: *Firm performance of high-technology SMEs in emerging markets is positively associated with ties with service intermediaries*.

7.2.2 Institutional Support and High-Technology SMEs Firm Performance

Defined as "the rules of the game in a society" (North, 1990:3), institutions exhibit significant legitimacy pressures for firms, and fundamentally affect firms' strategic choices and performance consequences (Hoskisson et al., 2000; Peng, 2003; Peng et al., 2008; Scott, 1995; Wright et al., 2005). Institutions in the form of the judiciary and bureaucracy, government structures, and other market mechanism enablers determine the 'playing field' for firms and their incentive and reward systems by accidentally or intentionally creating market imperfections (North, 1990; Voss, Buckley and Cross, 2010). As the largest emerging economy, China has been evolving from a centrally planned to a market-based economy through liberalisation and privatisation, accompanied by institutional changes in political systems, legal frameworks, and market structures (Child and Tse, 2001). Further, as profound differences in institutional frameworks exist between emerging and market economies, it is salient to incorporate

the institutional environment when investigating firms' strategies and behaviours in an emerging market such as China (Peng, 2003; Peng, Wang and Jiang, 2008). For instance, since the Chinese government still exercises control over firms' operations and management in terms of resource distribution, investment size, bank loans, and strategic organisational changes, firms operating in China opt for linking with government and its agencies, which have the power to ratify projects, allocate resources, arrange financing, supply raw materials, and offer opportunities that are vital to firms' growth (Gao et al., 2010). Hence, institutional theory is a powerful tool for understanding firms' strategies and behaviours from emerging markets, such as China, that still feature a legacy of heavy institutional and political involvement in business affairs notwithstanding the emergence of market system (Child and Rodrigues 2005; Luo, Xue and Han, 2010; Wang et al., 2012).

Institutional support reflects the extent to which government and its agencies provide initial and continuing support for firms in order to mitigate the adverse effects of the inadequate institutional infrastructure in the transition process (Li and Atuahene-Gima, 2001). As predicted by Peng (2003), there will be a longitudinal process for China to transit itself to market-based structure. However, Chinese government has made efforts to develop a relative free market mechanism, aiming to improve the efficiency of market transactions and resources allocation in the industry (Gao et al., 2010). It should be noted that although the ultimate goal of Chinese central government is to build a robust bureaucratic system that facilitates business operations, institutional support varies across regions and areas as a result of uneven economic and institutional reform (Luo, 2007; Sheng et al., 2011).

High-technology industries, as examined in this study, are labelled as strategically important industries in China. The Chinese government has provided strong support in

terms of financing, information, and technology for firms in high technology industries through institutional devices and regulatory regimes (Li and Zhang, 2007; Lu, 2000). As Zhang and Li (2010) argued, such support provided by government institutions aims to help high-technology SMEs undertake product and technology innovations because these ventures can be viewed as the window of the development in Chinese high-technology industries.

This discussion leads to the following hypothesis:

Hypothesis 3: *Firm performance of high-technology SMEs in emerging markets is positively associated with institutional support.*

7.2.3 Moderation Effects

The hypotheses developed above emphasise separately the importance of entrepreneurial orientation, ties with service intermediaries, and institutional support in firm performance in the context of high-technology SMEs in an emerging economy such as China. While a firm's internal resources point to skills for the transformation of inputs into outputs, social capital pertains to the possibility of identifying and capitalising upon more rewarding opportunities (Burt, 1992; Pennings et al., 1998). As Lee, Lee and Pennings (2001) contended, when firms have less social capital, their internal resources and capabilities are bound to generate fewer rents and the market to value them to be much lower. Furthermore, as institutions in emerging economies such as China significantly shape the strategies and behaviours of both domestic and foreign-invested firms, omitting the interaction between internal resources and institutional effects in firm performance has seriously limited our understanding of the emergence of SMEs in high-technology industry (Gao et al., 2010; Wei et al., 2014). Thus, identifying and examining both the ties with service intermediaries and institutional support to realise the value of entrepreneurial orientation represents a crucial research agenda.

Previous studies have suggested that entrepreneurial orientation is critical for organisational success (Covin and Slevin, 1991; Lumpkin and Dess, 1996). Entrepreneurial orientation can be seen as the entrepreneurial strategy-making processes that key decision makers use to enact organisational purpose, sustain its vision, and create competitive advantages (Rauch et al., 2009). Despite its appealing nature, the extant literature has noted that an entrepreneurial orientation may not necessarily lead to superior firm performance (Baker and Sinkula, 2009; Covin and Slevin, 1989; Dess, Lumpkin, and Covin, 1997; Li et al., 2005; Lee et al., 2001). It seems that simply examining the direct entrepreneurial orientation – performance relationship provides an incomplete picture of organisational performance (Wang, 2008).

Scholars have found this relationship is indirect or curvilinear (Wang, 2008; Tang et al., 2008; Zhao et al., 2011). Moreover, previous research suggests that the relationship between entrepreneurial orientation and firm performance is context specific, which depends on contextual variables such as environmental hostility (Covin and Slevin, 1989), and environmental uncertainty (Li, Zhang and Chan, 2005), as well as internal factors including firm resources (Su et al., 2011b), and marketing competence (Li, Zhang, and Chan, 2005). To extend this line of research, in this study we test the moderating effect of ties with service intermediaries and institutional support on the performance implication of entrepreneurial orientation.

The Moderating Effects of Ties with Service Intermediaries

It can be argued that SMEs, from a conventional perspective, are market oriented so that they tend to capture their niche market by introducing new generations of existing product and services, and they are more likely to engage in brand and line extensions to new target markets (Baker and Sinkula, 2009; Day, 1994). Nevertheless, entrepreneurial orientation inspired innovation is more than adaptation or response to customers'

manifest needs; it 'aimed at the rejuvenation, renewal and redefinition of organisations, their markets or industries' (Covin and Miles, 1999:50). It is through this process of opportunity exploration with the goal of rejuvenation, renewal, as well as redefinition that radical new product concepts are born (Baker and Sinkula, 2009). By this nature, entrepreneurial orientation requires large resource commitments. Without considerable resources, entrepreneurial initiatives are likely to be stifled, and the performance implication of entrepreneurial orientation might be impeded (Tang et al., 2008; Wiklund and Shepherd, 2005).

It also should be noted in Chinese transition market, consumers' perceptions of a product's benefits are likely to change over time - a firm's offerings that satisfy their customers' demands today may not meet their needs tomorrow (Kohli and Jaworski, 1990). A rapidly changing environment propels technology-based SMEs to timely update their technologies and products to maintain their competitive position (Sheng, Zhou and Li, 2011). Aggressive, entrepreneurially oriented smaller firms must be wary of charging headlong into unchartered terrain. Risk should be tempered by a strong understanding of customers and competitors, as well as reasoned assessments of opportunities and the threats that can quash them (Baker and Sinkula, 2009). As a result, access to resources plays a critical role in whether high-technology SMEs can translate entrepreneurial orientation into higher performance (Wiklund and Shepherd, 2005; Su, Xie and Wang, 2013).

Managerial ties can help those SMEs acquire external resources, thereby satisfying the resource requirement of entrepreneurial orientation. For example, Stam and Elfring (2008) demonstrate that the combination of high network centrality and extensive bridging ties enhances the entrepreneurial orientation- performances relationship, whereas among firms with few bridging ties, centrality may weaken the performance

implication of entrepreneurial orientation. Further, Su, Xie and Wang (2013) systematically investigate how and in what manner different types of managerial networking (e.g., political, financial, and business networking) affect the relationship between entrepreneurial orientation and new venture performance in Chinese emerging economic context. However, most entrepreneurial SMEs are still struggling to establish the essential networks to fulfil their goals. Particularly when SMEs engage in innovative and risky projects or pursue market opportunities proactively, various substantial supports from a large and reliable network are required (Tang et al., 2008). Building ties with service intermediaries may broaden high-technology SMEs' external search scope and reduce search cost (Zhang and Li, 2010). Through ties with service intermediaries, technology-based SMEs are likely to access to resources in order to accomplish their entrepreneurial strategic posture, which in turn improve firm performance. Therefore, we propose that:

Hypothesis 4: *The positive relationship between entrepreneurial orientation and high-technology SMEs firm performance will be stronger when the level of ties with service intermediaries is higher.*

The Moderating Effects of Institutional Support

Entrepreneurial orientation can advance firm performance, as literature suggests, but such an effect may be limited, and entrepreneurial orientation in conjunction with institutional support may increase the magnitude of such limitation. Institutional support reflects the extent to which administrative institutions such as governments and its agencies provide initial and continuing regulatory resources, financial, management, and technical support for SMEs in high-technology industry (Li and Atuahene-Gima, 2002). With higher institutional support these technology-focused SMEs are likely to perceive the environment as less threatening to their ventures' success and survival (Li

and Atuathene-Gima, 2002). It can be argued that the high level of institutional support is akin to benign or non-hostile environment, where provides 'a safe setting for business operations due to the overall level of munificence and richness in investment and marketing opportunities' (Covin and Slevin, 1989:75). Rather than having an entrepreneurial posture of proactivenss, innovation, and risk taking, high-technology SMEs performance might be improved by a more inwardly focused orientation that better capitalise on these abundant opportunities by placing an emphasis on efficient exploitation (Wiklund and Shepherd, 2005).

Although institutional support may directly help Chinese high-technology SMEs survive and succeed in the competitive market, it might hinder managers in their efforts to formulate entrepreneurial posture. It seems that SMEs are more likely to gear their competitive efforts to the prevailing conditions by aggressively trying to gain or maintain a competitive advantage (Covin and Slevin, 1989). With institutional support, high-technology SMEs may reduce or lose their motivation to engage in risky R&D projects, and become risk-averse and short-term-oriented, which in turn curtail the value of entrepreneurial orientation (Su, Xie and Wang, 2013).

As a result, we propose the following hypothesis:

Hypothesis 5: The positive relationship between entrepreneurial orientation and high-technology SMEs firm performance will be weaker when the level of institutional support is higher.

7.3 Variables and Measurements

The survey items are adapted from prior studies to ensure the validity of all measures. As suggested by Tan (1996), all the items used in this study are corroborated through extensive consultations with senior managers to better fit the Chinese context. All the

survey items are shown in Table 7.1 and are measured with a 5-point Likert scales, where 1= strongly disagree and 5= strongly agree or 1 = very weak and 5 = very strong.

Firm performance is adapted from Sheng, Zhou and Li (2011) and Tang, Tang, Marino, Zhang and Li (2008). Subjective measures are used because previous research has provided substantial evidence supporting the reliability and validity of perceptual performance measures (Dess and Robinson, 1984). Kumar, Subramanian and Yauger (1998) suggest that it is appropriate to use subjective measures where objective measures were inappropriate or unavailable. For this study, a subjective rather than an objective measure was used for several reasons. First, the sampled firms in this study are all SMEs. Such firms are notorious for their inability and reluctance to provide desired information (Fiorito and LaForge, 1986). Further, objective financial data on SMEs, in general, are not publicly available, making it impossible to check the accuracy of any reported financial performance figures (Covin and Slevin, 1989). Finally, absolute scores on financial performance criteria are noted to be affected by industry-related factors (Miller and Toulouse, 1986). As such, high-technology SMEs firm performance is measured with four items that top managers to evaluate their firms' performance relative to its principal competitors for the past three years on (1) sales growth; (2) market share growth; (3) return on investment (ROI); and (4) pre-tax profit growth rate.

The measure of entrepreneurial orientation is comprised of five items mainly based on a scale reported in Covin and Slevin (1989), Lumpkin and Dess (1996), and Li, Liu and Zhao (2006). We discussed the meaning of each item with our interviewees during the pilot investigation phase, and requested them to rank the items in accordance with their importance in the Chinese context. These five items are used as the entrepreneurial orientation measure so that the higher the score, the more entrepreneurial the strategic

posture. Thereby, the five items are: (1) in general, the top managers of our firm favour a strong emphasis on R&D, technological leadership and innovation; (2) in general, the top managers of our firm have a strong proclivity for high-risk projects with chances of very high returns; (3) in dealing with its competitors, our firm typically initiates actions to which competitors then respond; (4) our firm is very often the first business to introduce new products or services, administrative techniques, operating technologies, etc.; and (5) our firm typically adopts a very competitive posture aiming at overtaking the competitors.

Based on the measurement items from Zhang and Li (2010), this study measures ties with service intermediaries on the extent to which the firm had close relationships with (1) technology service firms (e.g., technology commercialisation and brokering), (2) accounting and financial service firms, (3) law firms, and (4) talent search firms. Previous research used similar measurements to examine firms' linkages with intermediary institutions in a cluster (McEvily and Zaheer, 1999; Zeng, Xie and Tam, 2010). This study adopting these general questions rather than the name-generator approach to measuring ties is consistent with previous studies on ties in the context of China (i.e., Luo, 2003; Peng and Luo, 2000; Zhang and Li, 2010). As Peng and Luo (2000:491) contended, the name-generator approach may be not effective in the Chinese context because 'ties were regarded as a personal and business secret, and some respondents were reluctant to disclose such contacts'.

We derive the measure of institutional support from Li and Atuahene-Gima (2001, 2002). It may reflect the extent to which the government provides general and broad support to all firms in the region (Sheng, Zhou and Li, 2011). It consists of four items and attempts to request respondents to indicate the extent to which they agree with the following statements in relation to government and its agencies over the last three years

have: (1) implemented policies and programmes that have been beneficial to business operation, (2) provided needed technology information and technical support, (3) played a significant role in providing financial support, and (4) helped firms obtain licenses for imports of technology, manufacturing and raw material, and other equipment.

Previous studies have suggested that both organisational and environmental factors may affect the link between internal and external factors and firm performance (e.g., Gao, Zhou, and Yim, 2007; Lau and Bruton, 2010). This study controls for several variables in testing the hypotheses. We firstly control for firm size because in emerging economies such as China, information asymmetry and high transactions costs tend to favour large-sized organisations with slack resources and access to institutions, which smaller firms do not enjoy (Li et al., 2006; Zhao et al., 2011). To prevent skewness, firm size is measured as the natural logarithm of the number of employees of the firm. We also measure firm age as the number of years since the high-technology SMEs were established in China. We include firm's ownership as a dummy variable, with privately-owned firms taking the value 1 and 0 otherwise.

Following McDougall et al. (1994) and Zhang and Li (2010), we use a three-item scale to measure the perceived industry growth. Industry growth is an important indicator of industry structure, since it entails market attractiveness and environmental munificence for new technology SMEs (Luo, 2003; Pfeffer and Salancik, 1978). High market growth may potentially reduce the effect of competitive pressures on SMEs, and mitigate retaliation by incumbent competitors (Li and Atuathene-Gima, 2002; Porter, 1980). Firms in high growth industries might prefer to allocate resources into long-term in-house product innovation to keep pace with changes in the market (McDougall et al., 1994).

As defined by Li and Atuahene-Gima (2002), perceived industry growth refers to the level of managers' perceived growth of their principal industry within the last three years. In general, high industry growth is likely to manifest itself as more market opportunities, greater competitive variation, and expanded options for firms (Datta, Guthrie, and Wright, 2005). Managers' perceived industry growth affects the level of managerial discretion – or latitude of action – that managers perceived to have in their entrepreneurial strategy making (Hambrick and Finkelstein, 1987). The respondents are asked to indicate the extent to which they agree with the following statements in relation to their industry in the past three years: (1) there has been high growth in demand in this industry; (2) this industry offered many attractive opportunities for future growth; and (3) growth opportunities in this industry have been abundant. It should be noted that industry-level archival data might be less relevant in our research setting, because the industry data available in China is at such a gross level that one would lose any significant meanings (Zhang and Li, 2010). The use of managers' perception of environment has been supported by a number of prior studies based on the relevance of such perception to the formulation of strategy as well as its accuracy with respect to objective measures of environmental conditions (Li et al., 2005). As Luo and Park (2001) contended, firms consider and interpret the same environmental attributes differently and consequently respond with different strategies and behaviours. Thus, the objective reality of the physical environment may be less important in determining organisational actions.

7.4 Adequacy of Measures: Reliability, Validity, and Common Method Variance

We take several steps to assess the construct reliability and validity of all measures. As suggested by Li, Liu and Zhao (2006), although the constructs developed in this study are measured primarily on previously validated measurement items and grounded in the

literature, they should be modified partly to suit the Chinese context. As noted earlier, we pilot tested the survey with 14 founding members and top executives of 12 high-technology SMEs in China. Furthermore, as shown in Table 7.1, the K-M-O measure of sampling adequacy (0.822) and Barlett's test of sphericity (2298.225) are highly significant (p < 0.001), suggesting that factor analysis is suitable for this data. Following Nunnally (1978), we first assess the reliability of the multi-item constructs with Cronbach's alpha. As shown in Table 7.1, the Cronbach's alpha for all scales are greater than the recommended threshold of 0.70 (ranging from 0.796 to 0.856), indicating that the items of each construct are internally consistent and the scales are deemed reliable for further data analysis.

Testing of construct validity focus not only on finding out whether an item loads significantly on the factor it is measuring (e.g., convergent validity), but also on ensuring that it measures no other factor (e.g., discriminant validity) (Campbell and Fiske, 1959). Following the guidelines outlined by Anderson and Gerbing (1988), this study uses AMOS 19.0 with maximum likelihood estimation to perform confirmatory factor analysis (CFA) for assessing convergent validity and discriminant validity of the multi-item constructs. A five-factor measurement model is examined in which the indicators of the five constructs – firm performance, entrepreneurial orientation, perceived industry growth, ties with service intermediaries, and institutional support are allowed to load only on their expected latent variables.

As presented in Table 7.1, the standardised factor loadings ranging from 0.518 to 0.870 are highly significant for the all the items, suggesting that all of these indicators are similarly responsive to changes in the underlying constructs they are purported to measure (Li and Atuahene-Gima, 2002). All average variances extracted (AVE) are greater than 0.50 (except for entrepreneurial orientation, which is slightly below 0.5),

which is the indicative threshold recommended by previous studies (e.g., Bagozzi and Yi, 1988; Fornell and Larcker, 1981; Zhou, Gao, Yang, and Zhou, 2005). Moreover, the results show that the composite reliability (CR) of each construct (0.801 - 0.858) is all above the generally recommended threshold of 0.70 which clearly demonstrate adequate convergent validity (Fornell and Larcker, 1981).

Discriminant validity is the extent to which measures of different latent constructs are distinct from each other, which is demonstrated if the average variance extracted (AVE) for each construct is above the squared correlations between constructs (Hair, Black, Babin, Anderson, and Tatham, 2006). Table 7.2 consists of the square roots of the AVE for each individual latent variable along the diagonal and correlation coefficients in the off-diagonal elements. The discriminant validity of a construct is adequate when the diagonal element is larger than each of the off-diagonal elements in the corresponding rows and columns. As shown in Table 7.2, the results indicate that all shared variances are less than the AVEs, confirming a sufficient discriminant validity of all the constructs used in this study.

Further, with AMOS, this study conducts an assessment of model fit. It should be noted that the chi-square ($\chi2$) likelihood ratio test is very sensitive to the sample size as well as the number of items and constructs in the model (Wang, 2008). For instance, the threshold for $\chi2$/df ratio should be less than 3.0 or less than 2.0 in a more restrictive sense; Adjusted goodness-of-fit (AGFI) index should be over 0.80; Normed fit index (NFI) indicates the extent to which the model improves fit compared to a random model and a value greater than 0.80 is considered indicative of good fit; values of Goodness-of-fit index (GFI), Comparative fit index (CFI) should be over 0.90; Root mean square error of approximation (RMSEA) value should be less than 0.08, indicating a low discrepancy between the implied covariance in the model and observed covariance in

the data (Anderson and Gerbing, 1988; Bentler and Bonnett, 1980; Browne and Cudeck, 1993; Hair et al., 2006; Hu and Bentler, 1999; Li, Liu and Zhao, 2006).

The results of a confirmatory factor analysis (CFA) indicate that the hypothetical model fits the data reasonably well (χ^2 = 400.165, p < 0.001, χ^2/df = 2.501, GFI = 0.865, AGFI = 0.823, NFI = 0.831, CFI = 0.890, and RMSEA = 0.076). Although the values of GFI and CFI are slightly lower than the recommended value of 0.90, they are close to 0.90 and are deemed as acceptable (Bollen, 1989; Joreskog and Sorbom, 1996). Therefore, the overall analyses of the data demonstrate the theoretical constructs exhibit relatively good psychometric properties.

Since this study employs cross-sectional survey data and a single respondent from each firm, the data may introduce the potential of common method variance (Podsakoff, MacKenzie, Lee, and Podsakoff, 2003). Scholars recommend using both procedural and statistical methods to minimise the bias (Podsakoff et al., 2003). Regarding procedural methods, the respondents are assured of the confidentiality and anonymity to reduce their evaluation apprehension and 'make them less likely to edit their responses to be more socially desirable, lenient, acquiescent, and consistent with how they think the researcher wants them to respond' (Podsakoff et al., 2003:888). Regarding statistical techniques, this study uses Harman's single factor test to check for the presence of the common method bias (Podsakoff and Organ, 1986). The analysis resulted in five factors with eigenvalues greater than 1.0, with the first factor accounting only for about 29.023% of the total variance. The results indicate that neither a single factor nor a general factor accounted for the majority of the covariance in the measures. Thus, our result suggests that common method variance is not a major issue in this study.

Table 7.1 Construct Measurement and Factor Analysis Results

Item Description Summary	Standardised Loading	t-value
Firm Performance (FP) (Cronbach α = 0.825) Composite reliability ρ = 0.826; AVE = 0.544	-	-
1. Sales growth	0.750	10.114
2. Market share growth	0.798	10.528
3. Return on investment (ROI)	0.715	9.752
4. Pre-tax profit growth rate	0.683	Fixed
Entrepreneurial Orientation (EO) (Cronbach α = 0.796) Composite reliability ρ = 0.801; AVE = 0.448	-	-
1. In general, the top managers of our firm favour a strong emphasis on R&D, technological leadership and innovation	0.682	9.491
2. In general, the top managers of our firm have a strong proclivity for high-risk projects with chances of very high returns	0.622	8.756
3. In dealing with its competitors, our firm typically initiates actions to which competitors then respond.	0.564	8.009
4. Our firm is very often the first business to introduce new products or services, administrative techniques, operating technologies, etc.	0.759	10.330
5. Our firm typically adopts a very competitive posture aiming at overtaking the competitors.	0.701	Fixed
Perceived Industry growth (IG) (Cronbach α = 0.856) Composite reliability ρ = 0.858; AVE = 0.669	-	-
1. There has been high growth in demand in this industry	0.808	12.926
2. This industry offered many attractive opportunities for future growth	0.870	13.471
3. Growth opportunities in this industry have been abundant	0.773	Fixed
Ties with Service Intermediaries (TSI) (Cronbach α = 0.797) Composite reliability ρ = 0.802; AVE = 0.511	-	-
1. Technology service firms	0.656	7.204
2. Accounting and financial service firms	0.836	7.938
3. Law firms	0.803	7.879
4. Talent search firms	0.518	Fixed
Institutional Support (IS) (Cronbach α = 0.809) Composite reliability ρ = 0.814; AVE = 0.525	-	-
1. Implemented policies and programmes that have been beneficial to business operation	0.742	10.660
2. Provided needed technology information and other technical support	0.812	11.457
3. Played a significant role in providing financial support	0.620	9.039
4. Helped firms obtain licenses for import of technology, manufacturing and raw material, and other equipment	0.710	Fixed

Model Fit Index

χ^2 = 400.165, p < 0.001; $\chi 2/df$ = 2.501; GFI = 0.865; AGFI = 0.823; NFI = 0.831; CFI = 0.890; RMSEA = 0.076

Notes: AVE = average variance extracted

K-M-O Measure of Sampling Adequacy = 0.822;

Barlett's Test of Sphericity = 2298.225; P < 0.001.

7.5 Data Analysis and Results

Table 7.2 presents means, standard deviations, correlations, and square roots of the average variance extracted (AVE) values. Table 7.3 presents the results of hierarchical multiple regressions. Model 1 includes only control variables. Model 2 includes the direct effects of entrepreneurial orientation, ties with service intermediaries, and government support. In Model 3, the interaction terms between entrepreneurial orientation and other variables in terms of ties with service intermediaries and institutional support are added. The variance inflation factors (VIFs) associated with each of the regression coefficients are less than 2, which are well within the cutoff value of 10, a common threshold for acceptance, suggesting that no need for concern with respect to multicollinearity (Aiken and West, 1991; Neter et al., 1985). The Durbin-watson statistically fell within the acceptable range from 1.50 to 2.50, indicating that the assumption of independence of errors was satisfied.

Regression results are reported in Table 7.3. Hypothesis 1, proposing that entrepreneurial orientation will be positively related to high-technology SMEs firm performance, is strongly supported (Model 2; $\beta = 0.175$, $p < 0.01$). Hypothesis 2 pertains to the effects of ties with service intermediaries on firm performance. As shown in Table 7.3, ties with service intermediaries are positively associated with high-technology SMEs performance in the Chinese context, in line with Hypothesis 2 (Model 2; $\beta = 0.185$, $p < 0.01$). Further, the regression coefficient for institutional support is positive and statistically significant (Model 2; $\beta = 0.140$, $p < 0.1$), indicating that government support has positively and marginally significant effect on firm performance. Thus the result lends support to Hypothesis 3.

As presented in Table 7.3, the two interaction terms collectively and significantly increase the predicting power of the model (hierarchical F = 12.742, $p < 0.01$). In

addition, these significant R-square changes ($\Delta R^2 = 0.026$, $p < 0.01$) suggest the existence of interaction effects (Aiken and West, 1991). Hypothesis 4 predicts that the positive relationship between entrepreneurial orientation and high-technology SMEs firm performance will be stronger when the level of ties with service intermediaries is higher. This hypothesis is strongly supported because the coefficient for the interaction of entrepreneurial orientation and ties with service intermediaries is positive and statistically significant (Model 3; $\beta = 0.138$, $p < 0.05$). As Jaccard, Turrisi, and Wan (1990) suggest, a significant interaction effect should be further analysed and interpreted as a conditional effect on the main effect. To facilitate interpretation of these findings, this study plots this moderating effect in Figure 7.2 by following the procedure suggested by Aiken and West (1991). The interaction effect illustrated in Figure 7.2 illustrate that in high-technology SMEs with closer ties with service intermediaries, stronger entrepreneurial orientation will be associated with higher firm performance.

Hypothesis 5 postulates that positive relationship between entrepreneurial orientation and high-technology SMEs firm performance will be weaker as institutional support is higher. The coefficient for the interaction of entrepreneurial orientation and institutional support is negative and statistically significant (Model 3; $\beta = -0.170$, $p < 0.01$). Thus, Hypothesis 5 is strongly supported. The result indicates that institutional support negatively moderates the relationship between entrepreneurial orientation and firm performance in the context of Chinese high-technology SMEs. Following a similar procedure as described above, the moderating effect of the institutional support on the relationship between entrepreneurial orientation and firm performance are depicted in Figure 7.3. As shown in Figure 7.3, the positive relationship between entrepreneurial orientation and firm performance is weaker when the level of government support is higher, which provides further support for Hypothesis 5.

The results in Table 7.3 also show that firm size and firm ownership have significant effects on firm performance in Model 1. Filatotchev et al. (2011) suggest that large firms are capable of commercialising their innovation and achieving high new product sales. Hence, large firms are more likely to have better firm performance. Furthermore, compared with state-owned enterprises (SOEs) or other collectively owned enterprises, privately owned enterprises in high technology industry tend to perform better in terms of firm performance. The results are consistent with previous research (Li and Zhang, 2007; Zhang et al., 2009). With regard to firm age, it is positive, but insignificant. This result indicates that firm age plays a less important role in high-technology SMEs' firm performance than firm size and ownership. In addition, perceived industry growth has a significantly positive relationship with firm performance, suggesting that high-technology SMEs can perform better in high growing industries. As theoretically expected, when these entrepreneurial SMEs are in a growth industry with a higher level of resource munificence in the environment, they tend to have a better chance to build up their competitive advantage, and thereby achieving better firm performance.

Table 7.2 Descriptive Statistics

Variables	Mean	S.D.	1	2	3	4	5	6	7	8
1. Firm size	5.281	0.912	-							
2. Firm ownership	0.735	0.442	-0.103a	-						
3. Firm age	11.981	4.485	0.293c	-0.090	-					
4. Perceived industry growth	3.549	0.861	-0.027	-0.035	-0.067	*0.818*				
5. Entrepreneurial orientation	3.745	0.737	0.261c	-0.026	0.124b	0.291c	*0.669*			
6. Ties with service Intermediaries	3.665	0.864	0.079	0.050	0.066	0.111a	0.172c	*0.714*		
7. Institutional support	3.689	0.708	0.120a	0.083	-0.020	0.489c	0.553c	0.155b	*0.724*	
8. Firm performance	3.403	0.606	0.178c	0.303c	0.023	0.200c	0.335c	0.275c	0.337c	*0.738*

Note: N= 260

a $P < 0.1$ b $P < 0.05$ c $P < 0.01$ (two tailed)

Diagonal elements (in bold and italic) are square roots of the average variance extracted (AVE) values and off-diagonal numbers are correlations between variables in this study.

Table 7.3 Results of Multiple Regression Analysis (N=260)

	Firm performance					
	Model 1		Model 2		Model 3	
	β	t-Value	β	t-Value	β	t-Value
Control Variables						
Firm size	0.216***	3.633	0.140**	2.429	0.146**	2.562
Ownership	0.336***	5.899	0.304***	5.591	0.288***	5.304
Firm age	0.008	0.140	-0.012	-0.220	-0.011	-0.192
Perceived industry growth	0.217***	3.827	0.075	1.211	0.097	1.581
Direct Effects						
H1: Entrepreneurial orientation			0.175***	2.646	0.142**	2.144
H2: Ties with service intermediaries			0.185***	3.407	0.223***	4.062
H3: Institutional support			0.140*	1.974	0.082	1.131
Moderating Effects						
H4: Entrepreneurial orientation × Ties with service intermediaries					0.138**	2.360
H5: Entrepreneurial orientation × Institutional support					-0.170***	-2.777
F value	14.425***		14.564***		12.742***	
R^2	0.185		0.288		0.314	
Adjusted R^2	0.172		0.268		0.290	
ΔR^2	-		0.104***		0.026***	

Notes: ***P<0.01, **p<0.05, *p<0.1; Standardized coefficients reported; Durbin-Watson = 1.168
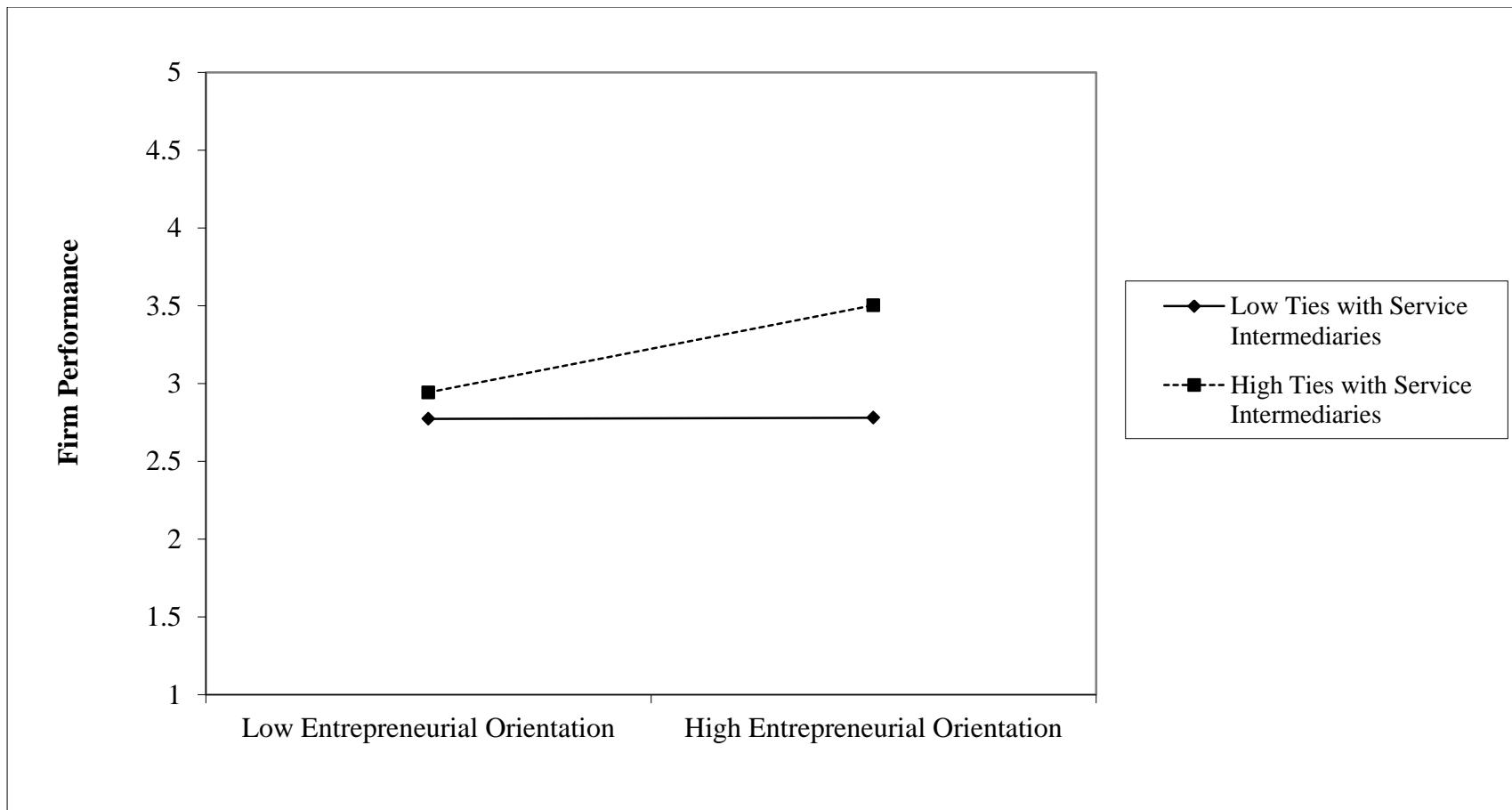
Figure 7.2 Entrepreneurial orientation and firm performance – the moderating role of ties with service intermediaries
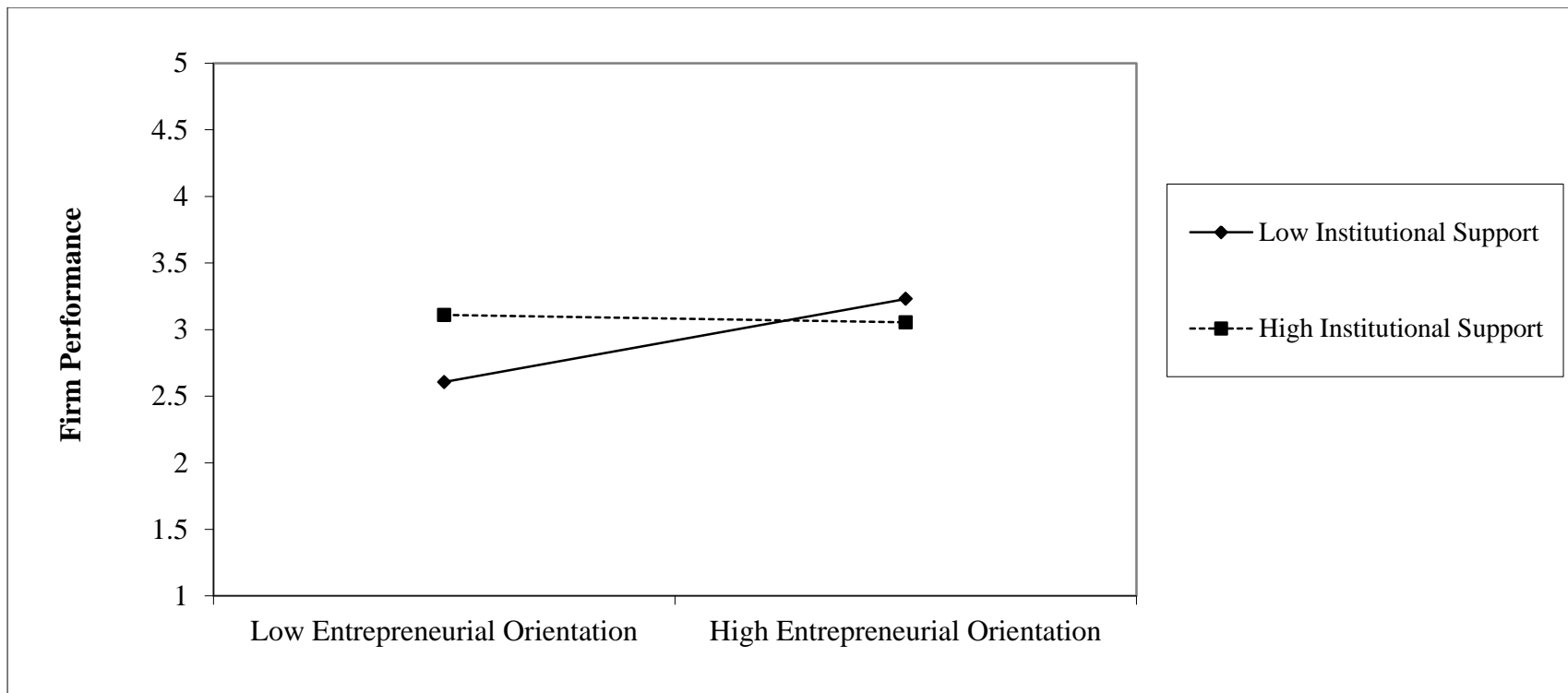
Figure 7.3 Entrepreneurial orientation and firm performance – the moderating role of institutional support

7.6 Discussion

With survey data obtained from a sample of SMEs in China's high-technology industries, this study investigates simultaneously the effects of entrepreneurial orientation, managers' ties with service intermediaries and government support in firm performance. In addition, this study examines the moderating role of ties with service intermediaries and government support in the performance implication of entrepreneurial orientation.

As predicted in H1, our finding that entrepreneurial orientation is significantly and positively related to firm performance shows that such strategic orientation enables high-technology SMEs in the Chinese emerging economy to offer innovative products and compete by being a first market entrant and by experimenting with emerging trends and technologies (Li, Zhang, and Chan, 2005), thereby generating superior firm performance. The result of the present study is consistent with the finding of Wiklund and Shepherd (2005), Lee, Lee, and Pennings (2001), and Su, Xie, Wang, and Li (2011) that entrepreneurial orientation positively influences small business performance. For SMEs in high-technology industry, entrepreneurial orientation tends to provide the ability to identify and capitalise on new product-market opportunities. Specifically, SMEs use proactive, innovative and risk-taking strategic postures not only to seek out emergent market opportunities, but also maintain and bear the costs and risks inherent in extensive capabilities for responding to market and contextual changes (Luo, 1999).

High-technology SMEs need to be proactive in order to anticipate and act on future wants and needs in the marketplace, thereby creating a first-mover advantage and enhancing firm performance (Lumpkin and Dess, 1996). With such a forward-looking perspective, high-technology SMEs tend to identify emerging opportunities and act on those opportunities quickly so as to capture higher entrepreneurial profit (Su, Xie and

Li, 2011). As argued by many, SMEs constrained by size-related disadvantages typically rely on their flexibility and timely responsiveness to customer needs to create and serve profitable market niches (Caloghirou et al., 2004). SMEs might prefer to operate in stable and predictable environments, because they focus only on meeting customers' manifested needs rather than the pursuit of new market opportunities (Atuahene-Gima and Ko, 2001). However, our study tells a different story. In Chinese transitional economies, market environment change rapidly and significantly. Such the transitioning environment has greatly stimulated industry growth and created opportunities attractively for Chinese domestic firms (Li, Zhang and Chan, 2005; Peng and Heath, 1996). Further, firms placing too much emphasis on articulated customer needs are likely to lose certain opportunities and drop behind technological development, which render them vulnerable to compete with rivals in the marketplace (Li, Zhao, Tan, and Liu, 2008). In this regard, SMEs in high-technology with proactive posture may strive to find and grasp the emergent opportunities, and thereby capturing high entrepreneurial profits.

High-technology SMEs need to be innovative so as to engage in and support new ideas, novelty, and experimentation, as well as facilitate R&D activities to seize new opportunities brought on by the significant changes in transitional economic environment (Atuahene-Gima and Ko, 2001; Covin and Slevin, 1991; Lumpkin and Dess, 1996). With the rapid development of the Chinese emerging economy and the opening of Chinese markets, more and more top managers of small Chinese firms in high-technology industry face competitive pressures and understand the importance of innovation activities in obtaining sustainable competitive advantage (Li, Liu, and Zhao, 2006; Peng, 2003). Innovative posture might comply with the nature of SMEs in high-technology industry as competing on the basis of their technological and engineering skills for specific customer niches. Without innovation, high-technology SMEs would

have to compete with large and established rivals by offering traditional products, services and distribution channels, etc. Head-to-head competition may result in failure for small business due to their resource shortcomings, scale diseconomies, and questionable reputation (Lee et al., 2001). Through innovations, high-technology SMEs may depart from established technologies and practices, and introduce new products and technologies, thereby achieving success in Chinese emerging market.

High-technology SMEs need to be risk-taking so as to incur large resource commitment to uncertain and novel business in the interest of capturing high returns by seizing opportunities in the marketplace (Lumpkin and Dess, 1996; Miller, 1983). It should be noted that proactive and innovative postures often entail high risks, which may stifle managers of SMEs in high-technology industry to commit a large percentage of a firm's resources to R&D projects where the outcomes are unknown (Su, Xie, and Li, 2011). On the other hand, if small firms place an overemphasis on incremental innovations, or worse, a focus on mimicking the successful products, services or technology processes of others, they will not be able to build a market presence in the face of large rivals, especially in Chinese transitional environments (Baker and Sinkula, 2009). Under such circumstance, it seems that Chinese new technology SMEs are willing to take higher risks than their counterparts in developed markets. More importantly, it may strike managers of high-technology SMEs that they must bear high costs and risks to engage in developing innovative products, thereby seizing new market opportunities and enhancing firm performance. Therefore, our findings, coupled with others, suggest that entrepreneurial orientation adds an advantage to high-technology SMEs, thereby attaining superior performance in the context of emerging markets such as China.

Our result suggests that as suggested by the H2, there is a significant positive correlation between ties with service intermediaries and firm performance of high-

technology SMEs in China. It reveals that the close connection and cooperation with service intermediaries, such as technology service firms, accounting and financial service firms, law firms, as well as talent search firms, will lead to superior firm performance in the context of Chinese emerging economy. Rapidly changing transitional environment and fiercely intense competition in China propel domestic firms to update their technologies and products to maintain their competitive position (Sheng et al., 2011). Under such an environment condition, new technology-based SMEs tend to build linkages with various players in the market in order to acquire resources and capabilities. Departing from previous studies, this study focused on the role of ties with service intermediaries in high-technology SMEs firm performance. As Zhang and Li (2010) contend, the specialised network role of intermediary institutions can contribute to new ventures' production innovation by broadening their external search rather than relying upon their limited personal contacts, as well as reducing costs associated with locating external sources of information and knowledge. For many Chinese SMEs in high-technology industry, they still lack adequate understanding on the fact that the information resource is a critical driving force for innovation, which may impede the enhancement of competitive advantages in the market (Zeng, Xie and Tam, 2010).

To be precise, high-technology SMEs collaborate with technology service firms may obtain technological information and specialised expertise, and consequently facilitate the development of new product. For example, technology service firms may supply high-technology SMEs with previously unknown information with regard to other firms' technologies and innovation, which has the potential to help those SMEs conduct R&D activities (Zhang and Li, 2010). During the Chinese economic transitional period, needs of customers change fast and unpredictable, and some of these needs are likely to render changes in SMEs' product innovation (Li, Liu and Zhao, 2006). An accurate

understanding of changes can be regarded as important source of new ideas for developing new products. Technology service firms tend to help SMEs in high-technology industry scan and recognise these changes, thereby promoting their innovation activities. This type of service provided by technology service firms might be particularly useful for small technology ventures that do not possess the necessary resources to undertake information scanning and analysis functions. Moreover, Technology service firms help those SMEs to achieve technology transfer and value creation process out of technological innovation (Li, Guo, Liu, and Li, 2008). Further, technology service firms actively engage in the commercialisation of technology innovations, as well as offering a series of commercial frameworks to establish strong legal measures to protect the rights of different parties in the market (Zhu and Tann, 2005). Through technology service firms, high-technology firms can transfer their innovation into commercial products, thereby attaining superior firm performance.

Prior research claims that accounts not only act as auditors and tax advisors, but also serve as business consultants in structuring deals for firms in Silicon Valley (Atwell, 2000). In particular, accounting firms have specialised high-technology practices and services designed for new technology SMEs (Bahrami and Evans, 1995). Likewise, financial service firms may not only offer SMEs financial advice but may also provide specialised know-how to SMEs by managing and controlling their financial resources. Under the Chinese transitioning economic environment, the domestic capital market is not fully developed, and most Chinese firms, especially SMEs, face great pressures from the absence of capital when they want to develop rapidly alone with the fast growth of the Chinese economy (Li, Liu and Zhao, 2006). For example, it seems to be impossible for Chinese high-technology SMEs obtain loans from commercial banks due to their high failure rate and short lifespan. Further, as venture capital and ChiNext are just now emerging in China, they are not able to supply adequate funds to SMEs in

high-technology (Su, Xie and Wang, 2013). More importantly, high-technology SMEs should be cognizant of balancing the costs of R&D activities and day to day business operations, otherwise SMEs are less likely to survive in the competitive market. Thus, this type of collaboration is appropriate for Chinese high-technology SMEs that do not have the sufficient resources to deal with financial issues, and consequently improve SMEs' firm performance.

With regard to law firms, high-technology SMEs involved in a cooperative agreement with them may obtain general business information and legal advice. It should be noted that Chinese high-technology SMEs are, in general, located in science parks or industry clusters, thereby collaboration with law firms enables them to learn about best practices, ideas for new inventions, and new ways of doing business from competing and non-competing companies (Wolpert, 2002). Further, the law firms may offer high-technology SMEs legal advice about the protection for their intellectual properties, which, in turn, may dispel hesitation among managers who are concerned with their investments in the R&D projects. Through law firms, SMEs in high-technology industry might effectively protect their new innovation outcomes, thereby facilitating the pursuit of innovation and exploration of new opportunities in the context of Chinese emerging markets.

In respect of talent search firms, high-technology SME build the close network with those intermediary organisations to find technical experts, such as experienced engineers and R&D personnel, and hence enhance their innovation capabilities and firm performance. It should be noted that among the barriers to innovation identified, 'lack of technically qualified experts' is the most important barrier for Chinese high-technology SMEs to engage in innovation activities (Xie, Zeng and Tam, 2010). Further, talent search firms can facilitate the mobility of people across firms, helping

building social networks that transcend firms (Zhang and Li, 2010). Put together, ties with service intermediaries can offer Chinese high-technology SMEs information resources and supporting services, which can be imperative in Chinese emerging market featured with high velocity, dynamism and vibrancy (Luo et al., 2012).

Our result shows that institutional support is significantly associated with firm performance of high-technology SMEs in China (as showed in H3), suggesting that institutional support is more than a static background, but is an active agent shaping and affecting firms' strategies and behaviours (Peng, 2003; Peng et al., 2009). This result also confirms that institutional support can be regarded as a resource environment that provides SMEs with opportunities for conducting transactional activities (Gao, Murray, Kotabe, and Lu, 2010). Given the important role SMEs play in Chinese transitional economies, both central and local governments and their agencies are urged to take "Effective measures to strengthen SME support especially for high-tech SMEs and those innovative SMEs, which can develop new products, improve products quality and fill gaps in the market" (General Office of the State Council, 2000).

It should be noted that a supportive government may deliver valuable policies and industry information through public channels and provides scarce resources such as financial supports, subsidies and tax breaks, according to a set of articulate rules (Sheng, Zhou and Li, 2011). For instance, the main policy response of the Chinese Government to the development of SMEs was to introduce and implement the 2003 SME Promotion Law. This policy focuses both on developing organisations, programmes and services to stimulate SME development and on improving the wider business environment for SME development (Atherton and Smallbone, 2010). In addition, Xie et al. (2010) found that the preferential tax policy plays an important role in the innovation process of Chinese SMEs, which may encourage SMEs to engage in

R&D activities. Further, the improvement of institutional environments provides a favourable environment for Chinese SMEs in high-technology industry. For example, to help reduce the risk exposure for high-technology SMEs innovation and, further, to offset its market reluctance, the Chinese government may act as early adopters for the innovative products in order to encourage product innovation (Liu, 2011). Moreover, a report by Beijing High-Technology Experimental Zone office in China indicated that 76 percent of new technology ventures within the Zone obtained initial funding from their administrative agencies (Li and Atuahene-Gima, 2002). In either case, government support is seen taking a significant role in shaping and encouraging the development of high-technology SMEs in Chinese emerging market, which in turn can bolster SMEs' legitimacy and firm performance. Therefore, the impact of the institutional framework generated by governments on firm performance of high-technology SMEs from emerging economies should be taken into account when considering the determinants of firm performance.

This study also examines the moderating role the ties with service intermediaries and government support in the performance implication of entrepreneurial orientation. As H4 predicted, our result suggests that building ties with service intermediaries is a moderator affecting the effects of entrepreneurial orientation on firm performance. It moderates them in such a way that for executives of high-technology SMEs with higher level of ties with service intermediaries there will be an even stronger impact of entrepreneurial orientation on firm performance in Chinese emerging context. As Covin and Slevin (1991) contended, entrepreneurial orientation is a resource-consuming strategic posture. It seems that proactiveness, innovativeness, and risk-taking all require large resource commitments to R&D projects, untried technologies, new products or services to the market (Tang et al., 2008). Such a large investment inevitably entails high risks and failures, which might make high-technology SMEs insolvent and fatal.

This is particular true for technology-focused small firms that usually do not possess the resources to absorb failed initiatives (Chandy and Tellis, 2000). Hence, to achieve the goal of entrepreneurial orientation, high-technology SMEs may actively engage in building various collaborations with different players in the market.

Conventionally, cooperation with those prominent organisations, such as business partners, may enable smaller firms to access their resources and capabilities, thereby overcoming their resource constraints. However, this study tends to extend this stream of research by focusing on ties with service intermediaries, and suggests that technology-focused SMEs can benefit from cooperation with service intermediaries in the Chinese emerging markets. In particular, for SMEs in high-technology industry, ties with service intermediaries might enable them to search a broader range of firms, organisations, and industries, thereby accelerating firms' acquisition of competitive resources (McEvily and Zaheer, 1999).With the strengthening of ties with service intermediaries, high-technology SMEs may acquire sufficient resources to meet the resource requirements of entrepreneurial orientation, thereby bolstering the performance implication of entrepreneurial orientation.

It should be noted that Chinese consumers face a fast changing environment and their tastes and needs are evolving rapidly (Gao et al., 2007). Consequently, a firm should continuously ascertain the changing preferences of consumers and adjust its offerings accordingly (Zhou et al., 2005). Moreover, as our sample firms are all from high-technology industries, these SMEs tend to narrow down the focus on specific customer niches and devote their resources to R&D activities to develop new products and technologies, which may help capture emerging opportunities. However, a very high entrepreneurial orientation might blind the firm into the erroneous belief of technological superiority, which may lead to innovations without the customer appeal or

relevance to enhance firm profitability (Atuahene-Gima and Ko, 2001; Baker and Sinkula, 2009). High-technology SMEs with limited resources are not able to afford such fatal initiatives that may drive them out of the competitive market. Building strong ties with service intermediaries may help channel firms' resources toward the right opportunities, thereby enhancing the relationship between entrepreneurial orientation and firm performance in the context of high-technology SMEs in China's emerging economy.

As H5 expected, the relationship between entrepreneurial orientation and high-technology SMEs firm performance is moderated by institutional support such that when institutional support is high entrepreneurial orientation is negatively related to firm performance. It seems that institutional support may limit the effective implementation of entrepreneurial strategic orientations by reducing managers' motivation to compete on innovative products, as well as conflicting with the market-focused strategies normally adopted by small businesses. Arguably, in some respects, government support is akin to benign environment because it provides a safe setting for all companies with relatively sufficient resources and opportunities. While a munificent environment can enable small technology ventures to easily grasp growing opportunities, such an environment may stifle entrepreneurial endeavours, and could possibly fail to translate entrepreneurial orientation into higher performance. For example, with strong institutional support, firms are not typically forced to engage in uncertain, resource-consuming endeavours so as to maintain viability (Covin and Slevin, 1989). It may reflect the fact that SMEs managers tend to achieve better performance by relying on preferential treatments from the government, thus, discouraging them to proactively compete with rivals with new products or technologies. Moreover, a heavy reliance on government support likely disrupts and compromises a SME's efforts to determine customer needs and satisfy those needs with

long-term trusted relationships, thereby generating diminishing returns (Luo, Hsu and Liu, 2008). As a result, high level of institutional support impedes the positive relationship between entrepreneurial orientation and firm performance in the context of high-technology SMEs in Chinese emerging economy.

Taken together, these findings suggest that a synthesis of resource-based view, social capital, and institution-based view offers a good understanding of firm performance of high-technology SMEs in the context of an emerging market such as China. In particular, our study further reinforces the proposition that entrepreneurial orientation, ties with service intermediaries and government support are important antecedences of firm performance in an emerging and transitional market.

7.7 Contributions

The present study contributes to the understanding of determinants of firm performance of high-technology SMEs from emerging economies in several ways. First, it provides a better understanding of the entrepreneurial firms in an emerging market such as China, in contrast to much of the literature which has mostly focused on developed economies. Emerging economies such as China present good grounds to refine and test existing management theories and develop new ones (Peng, 2003). Relative to their counterparts in market economies, entrepreneurial firms such as high-technology SMEs in emerging and transitional markets face more constrained conditions because the legal institutional framework and strategic factor markets have not been well developed (Li and Zhang, 2007). It is noteworthy that these SMEs are more able to attain innovation success and superior firm performance by implementing entrepreneurial strategic postures to capture new business opportunities in emerging markets. This study contributes to this line of research by empirically investigating how and in what manner various organisational and institutional factors (e.g., entrepreneurial orientation, ties with service

intermediaries and institutional support) affect firm performance in the context of high-technology SMEs in emerging markets such as China.

Second, this study contributes to the emerging literature by considering the key role of managerial networking as represented by ties with service intermediaries in the development high-technology SMEs in China. Previous studies have suggested that firms in emerging and transitional economies have extensive reliance on external networks (Luo, 2003; Xin and Pearce, 1996). Our focus is different from previous studies that have typically investigated the role of managers' personal networks in firm performance (Li and Zhang, 2007; Stam and Elfring, 2008; Peng and Luo, 2000). This research extends previous research by examining how and in what manner ties with service intermediaries affect firm performance in the context of high-technology SMEs in China. As Zhang and Li (2010) contended, because strategic factor market and institutional infrastructures to support entrepreneurial activities have not yet been well developed in China, ties with service intermediaries can substitute such institutional voids and facilitate high-technology SMEs' external innovation search, thereby attaining market success.

Third, by incorporating the institutional component into existing entrepreneurship and strategy literature, this study helps to improve our understanding of the direct impact of institutional support on firm performance of high-technology SMEs in emerging economies. This research also supports the recent recognition and call for the systematic investigation of the fact that interaction between the institutional legacies of emerging markets and firms' internal resources will be crucial for understanding the entrepreneurial strategy and performance of technology-based SMEs (Peng, 2003; Peng, Sun, Pinkham and Chen, 2009; Yiu, Lau and Bruton, 2007). The overall positive relationship between institutional support and firm performance suggests that, in the

Chinese emerging economic environment, institutional support adds additional advantages to SMEs in high-technology industry, and thereby generating superior performance.

Finally, our study further reinforces the proposition that entrepreneurial orientation is positively associated with firm performance in an emerging economy. Prior theory and research note that the effect of entrepreneurial orientation on firm performance is complex and suggest that the empirical findings are inclusive. In particular, the performance implications of entrepreneurial orientation are context specific and diverse (Lumpkin and Dess, 1996; Wiklund and Shepherd, 2005). That is, the magnitude of the relationship between entrepreneurial orientation and firm performance is contingent upon both the internal organisational resources and the external environment (Tang et al., 2008). Based on our Chinese survey data, this study adds empirical evidences to extant entrepreneurial orientation literature by investigating high-technology SMEs in emerging economies.

Further, a success of entrepreneurial orientation might require a large resource commitment to product innovation. Particularly when SMEs engage in innovative and risky projects or pursue market opportunities proactively, substantial supports from extensive and reliable networks are required (Tang et al., 2008). Without considerable resources, entrepreneurial orientation may lead firms hardly to accord with the market environment or circumstances in which it is competing (Miller, 1983), thereby resulting in deficient performance. By examining the moderating effect of managerial networking such as ties with service intermediaries on the relationship between entrepreneurial orientation and firm performance, this study enrich our knowledge on entrepreneurial orientation that ties with service intermediary are important to achieve the performance implication of entrepreneurial orientation.

In addition, our study advances previous research by examining the moderating role of institutional support in the performance implication of entrepreneurial orientation. Our finding is consistent with the notion that institutional support may not be an entrepreneurial strategy enhancement, indicating that institutional support likely curtails the effective implementation of entrepreneurial orientation by reducing managers' motivation to pursue new opportunities and adapt to the transitional environments. Thus, this study contributes to entrepreneurship research by providing empirical evidence that the characteristics of the institutional environment affect the value of entrepreneurial orientation in the context of high-technology SMEs in China.

7.8 Managerial Implications

The findings from this study provide some important implications for policy makers and practitioners. For policy makers, it is important that the government provides more economic and political incentives aiming at encouraging technology-focused SMEs' managers to engage in product innovation and exploit entrepreneurial opportunities. While Chinese government has offered preferential policies with the aim of supporting the development of SMEs in China, it is still insufficient that government policies and reforms help high-technology SMEs improve their firm performance. In particular, policy makers from emerging economies should pay special attention to how to motivate high-technology SMEs to implement their entrepreneurial strategy, and formulate a set of effective and viable policies that assist high-technology SMEs in achieving market success.

For managers, our findings help them understand entrepreneurial orientation is the backbone for technology-focused SMEs survive and develop in a transitional economic environment. Entrepreneurs of the small firms should strive to develop entrepreneurial orientation to undertake R&D activities and consequently capture new opportunities.

Entrepreneurial firms now need to realise that self-owned brands, in-house R&D capabilities, and new product lines will play a more pivotal role in their survival and prosperity than ever before (Tang and Tang, 2012). Simultaneously, managers should be aware of the context requirements of successful implementation of entrepreneurial orientation. In emerging economies like China, customers' needs and demands may change rapidly due to the often transitioning and fast changing home markets. SMEs should plan meticulously to acquire and invest resources toward the right opportunities. Moreover, managers should broaden their external connections rather than just focus on the limited personal contacts. Further, it should be noted that the ultimate goal of China's reform is to deregulate its economy and establish a free and open market system (Sheng et al., 2011). Modern Chinese companies are encouraged to build their market-related competitive competences in order to capture the emerging market opportunities in these economies (Li and Zhang, 2007). Therefore, when making and implementing entrepreneurial orientation, managers should consider the institutional and cultural contexts which may stifle or enhance the effectiveness of this strategic posture.

7.9 Limitations and Future Research

This study is subject to several limitations, which also provide fertile avenues for further research. First, the cross-sectional nature of this study circumscribes causal interpretations among the variables in our model. For example, while this research has proposed that ties with service intermediaries are positively associated to high-technology SMEs firm performance, it is possible that the direction of causality may be reversed. Furthermore, as the role of ties with service intermediaries may change during Chinese economic transitions, it is unlikely to use the cross-sectional data for capturing their evolving roles. As Li and Atuahene-Gima (2002) suggest, the study would have

benefited from a time lag between the measurement of the independent and dependent variables for causal links to be determined. Thus a longitudinal study should be undertaken for future research, because it would enable us to investigate intriguing causality of the hypothesised relationships.

However, it should be noted that a commonly accepted research approach for establishing causal relationships in extant literature is the one that using a careful analysis of cross-sectional relationships before attempting to validate the findings via more costly time-lagged longitudinal studies (Kenny, 1979). Hence, by further analysing the results, we believe that the causal linkage between ties with service intermediaries and firm performance is impossibly reversed. (1) Findings in prior studies generally support the idea that external linkages enhance small firm's performance (Luo et al., 2012; Zeng et al., 2010). (2) The moderating effect of ties with service intermediaries on the relationship between entrepreneurial orientation and high-technology SMEs firm performance is significantly positive. This result is difficult to interpret from the reversed causality and thus offer stronger support to our assumption (Zhang and Li, 2010). (3) Drawing on information from our field consultation with managers, it tends to suggest that many Chinese high-technology SMEs, particularly those that located in science and technology clusters, establish ties with service intermediaries were in the first place.

Second, this study methodologically relied on self-reported data from single informants. As Li and Atuahene-Gima (2002) posit, it is likely that using retrospective data will pose such potential problems as limited recall of the respondents and biased perceptions of past realities. According to Williams et al. (1989) and Wang (2008), common method bias may account for more than 25% of the variance between perceptual and attitudinal variables. Although the Harman's single factor test results indicated that common

method bias is not a major issue for this study, the interpretation of the findings should be viewed in light of its potential influence. Further, our study is constrained by the lack of detailed firm-level financial data due to the difficulty of data collection in China. For example, it has been observed that managers in Chinese SMEs in general are generally reticent to disclose their financial performance and report details on assets as well as profitability. Future research may operationalise the constructs with other measures such as using objective or financial data.

Finally, our sample is limited to high-technology SMEs in China. Despite emerging economies share some common features in their market and institutional environments, they differ significantly in the stages of their economic and institutional development, as well as in cultural contexts (Sheng et al., 2011). It should be cautious to generalise the results of this study to other emerging economies. In particular, future research may investigate whether and how entrepreneurial orientation, ties with service intermediaries, and institutional support help entrepreneurial firms overcome market and institutional hurdles in other emerging and transitional markets, such as Russia, India, and Brazil.

Furthermore, ties with service intermediaries may encompass different cultural and institutional constituents across countries, and their impact may depend on cultural and institutional context. For example, it has been observed that Chinese firms in general are unwilling to appraise professional services in a way comparable to their Western counterparts (Zhang and Li, 2010). Thus, future research may provide comparative evidence to examine and document the relationship among ties with service intermediaries, external environment, and their performance in both developed ad emerging economies.

In conclusion, this study examines the effects of entrepreneurial orientation, ties with service intermediaries, and institutional support on SMEs firm performance in China's high-technology industries. We believe that our findings contribute to our understanding of the effect of various antecedents of high-technology SMEs firm performance in the context of an emerging market.

Note:

1. The literature on township and village enterprises (TVEs) in China indicates that TVEs is still owned or semi-owned by local governments, and TVEs is described as 'pseudo-SOEs' (Chen, 2007)

Chapter 8

Summary and Conclusion

8.1 Introduction

The previous chapters have examined the theoretical perspectives on the strategy and firm performance of high-technology SMEs in China's emerging economy, research methodology, and analysis of the data collected for this study. The main purpose of this chapter is to provide a summary of research findings.

8.2 Background and Aims of the Study

The motivation of this study is a need for a better understanding of the effects of both external and internal factors upon firm performance in the context of Chinese SMEs in high-technology industry. To extend previous literature articulating entrepreneurial strategies and activities in advanced economies, this study shifted its focus to emerging markets. In particular, this study specifically examined the perspective of Chinese high-technology SMEs. There is a paucity of research on the role of managerial networking (e.g., political networking and business networking) in high-technology SMEs new product performance. In addition, there are few studies examines in what manner the environmental context (i.e. perceived industry growth) affect the performance implication of managerial networking. There is also a lack of research which investigates how returnee entrepreneur and institutional factor such as institutional support affect the internationalisation of high-technology SMEs in China's emerging market. Furthermore, there are few studies which examine the effects of strategic orientations in terms of market orientation and entrepreneurial orientation on Chinese high-technology SMEs firm performance. Few studies have identified the conditions

under which strategic orientations enhances firm performance. Thus, this study attempts to fill these research gaps by analysing 260 Chinese SMEs in high-technology industry.

8.3 Research Methods of the Study

As adopted by previous studies on the research topic (notably, Li and Atuahene-Gima, 2001; Li and Zhang, 2007; Luo, 2003; Peng, 2003; Peng and Luo, 2000; Liu, Lu, Filatotchev, Buck, and Wright, 2010; Zahra, Ireland, and Hitt, 2000), this study employed a questionnaire survey to collect data. It can be argued that a criterion for choosing data collection methods would be methods suggested by previous studies.

There is no publicly available database in China which provides detailed information on these core dimensions of entrepreneurial activity identified as the key concerns of this study. In order to obtain requisite firm-level of detail, it was necessary to approach Chinese SMEs directly. The use of a questionnaire survey was affected by time and cost constraints, as well as by the aim to generate data from as large a sample as possible. While undertaking a face-to-face interview with the key manager in each firm would have been useful, such an approach was not feasible.

The questionnaire was designed following an extensive literature review, consultation with experts, and a pilot test. Future, the questionnaire was subjected to a back-translation process. To ensure good-quality replies and to enhance the response rate, the most senior and knowledgeable informants were identified to whom the questionnaire was addressed. The standard practice of assuring and guaranteeing anonymity for respondents was followed. In addition, recognising that Chinese managers may be reticent about reporting their financial performance, we decided to employ subjective approach in our study. Responding firms were compared with non-responding firms across a wide range of firm characteristics. No systematic non-response bias was found.

8.4 Summary of Findings

Table 8.1 summarises the research hypotheses developed, the level of support obtained for these hypotheses in accordance with regression results, and the type of statistical techniques used to test the hypotheses. Table 8.2 and Figure 8.1 summarie the internal and external factors which exert influence on performances of high-technology SMEs in China. This study mainly examines the effects of managerial networking, returnee entrepreneur, market orientation, and entrepreneurial orientation on firm performance in the context of Chinese SMEs in high-technology industry. Following the chapter order, the main findings of this study are summarised as follows:

Table 8.1 Summary of Hypotheses

Subject of Empirical Chapter	Hypotheses	Results	Statistical Technique Used
The Role of Managers' Political and Business Networking in High-Technology SMEs new Product Performance: Evidence from China's Emerging Economy	H1: Managers' political networking will be positively related to high-technology SMEs new product performance in China	Strong support	(1) Factor analysis (2) Confirmatory factor analysis (CFA) (3) Hierarchical multiple regression
	H2: Managers' business networking will be positively related to high-technology SMEs new product performance in China	Strong support	
	H3: The positive relationship between political networking and high-technology SMEs new product performance will be stronger when perceived industry growth is faster	Weak support	
	H4: The positive relationship between business networking and high-technology SMEs new product performance will be stronger when perceived industry growth is faster	No but negatively weak support	
The Export Performance of High-Technology SMEs in Emerging Markets: The Effects of Firm Resources and Institutional Support	H1: Export performance of high-technology SMEs in emerging markets is positively associated with the presence of returnee entrepreneur	Hypothesis is rejected	(1) Factor analysis (2) Confirmatory factor analysis (CFA) (3) Hierarchical multiple regression
	H2: Export performance of high-technology SMEs in emerging markets is positively associated with the previous entrepreneurs' MNEs work experience	Strong support	
	H3: Export performance of high-technology SMEs in emerging markets is positively associated with inward internationalisation orientation	Strong support	
	H4: Export performance of high-technology SMEs in emerging markets is positively associated with the presence of international networks	Strong support	
	H5: Export performance of high-technology SMEs in emerging markets is positively associated with institutional support	Strong support	
	H6: The presence of returnee entrepreneur will have a stronger, positive relationship with high-technology SMEs export performance when technological turbulence is high than when it is low	Strong support	
	H7: The presence of returnee entrepreneur will have a stronger, positive relationship with high technology SMEs export performance when institutional support is high than when it is low	Hypothesis is rejected	

The Role of Returnee Entrepreneur, Market Orientation and Political Connection in Firm Performance: Evidence from High-Technology SMEs in an Emerging Economy	H1: Firm performance of high-technology SMEs in emerging markets is positively associated with the presence of returnee entrepreneur	Strong support	(1) Factor analysis (2) Confirmatory factor analysis (CFA) (3) Hierarchical multiple regression
	H2: Firm performance of high-technology SMEs in emerging markets is positively associated with market orientation	Strong support	
	H3: Firm performance of high-technology SMEs in emerging markets is positively associated with top managers' political connections	Strong support	
	H4: The positive relationship between the presence of returnee entrepreneur and high-technology SMEs firm performance will be stronger when the level of political connection is higher	Strong support	
	H5: The positive relationship between market orientation and high-technology SMEs firm performance will be stronger when the level of political connection is higher	Strong support	
Entrepreneurial Orientation, Ties with Service Intermediaries, Institutional Support and Firm Performance: Evidence from High-Technology SMEs in an Emerging Market	H1: Firm performance of high-technology SMEs in emerging markets is positively associated with entrepreneurial orientation	Strong support	(1) Factor analysis (2) Confirmatory factor analysis (CFA) (3) Hierarchical multiple regression
	H2: Firm performance of high-technology SMEs in emerging markets is positively associated with ties with service intermediaries	Strong support	
	H3: Firm performance of high-technology SMEs in emerging markets is positively associated with institutional support	Weak support	
	H4: The positive relationship between entrepreneurial orientation and high-technology SMEs firm performance will be stronger when the level of ties with service intermediaries is higher	Strong support	
	H5: The positive relationship between entrepreneurial orientation and high-technology SMEs firm performance will be weaker when the level of institutional support is higher	Strong support	

Table 8-2 Summary of Internal and External Factors

Title of Empirical Chapter	Theoretical Perspectives	Factors	Performance
The Role of Managers' Political and Business Networking in High-Technology SMEs New Product Performance: Evidence from China's Emerging Economy	Social capital (Managerial networking)	Political networking	New product performance
		Business networking	
	Industry-based view (emerging and transitional economy environment)	Perceived industry growth as moderator	
The Role of Managers' Political and Business Networking in High-Technology SMEs New Product Performance: Evidence from China's Emerging Economy	Resource-based view Entrepreneur's human capital	Returnee entrepreneur	Export performance
		Previous entrepreneurs' MNEs work experience	
		Inward internationalisation orientation	
	Resource-based view Entrepreneur's social capital	International networks	
	Institutional theory	Institutional support	
		Institutional support as moderator	
	Industry-based view (emerging and transitional economy environment)	Technological turbulence as moderator	
The Role of Returnee Entrepreneur, Market Orientation and Political Connection in Firm Performance: Evidence from High-Technology SMEs in an Emerging Economy	Resource-based view Entrepreneur's human capital	Returnee entrepreneur	Firm performance
	Resource-based view	Market orientation	
	Resource-based view Entrepreneur's social capital	Political connection	
		Political connection as moderator	
Entrepreneurial Orientation, Ties with Service Intermediaries, Institutional Support and Firm Performance: Evidence from High-Technology SMEs in an Emerging Market	Resource-based view	Entrepreneurial orientation	Firm performance
	Resource-based view (social capital)	Ties with service intermediaries	
	Institutional theory	Institutional support	
		Ties with service intermediaries as moderator	
		Institutional support as moderator	
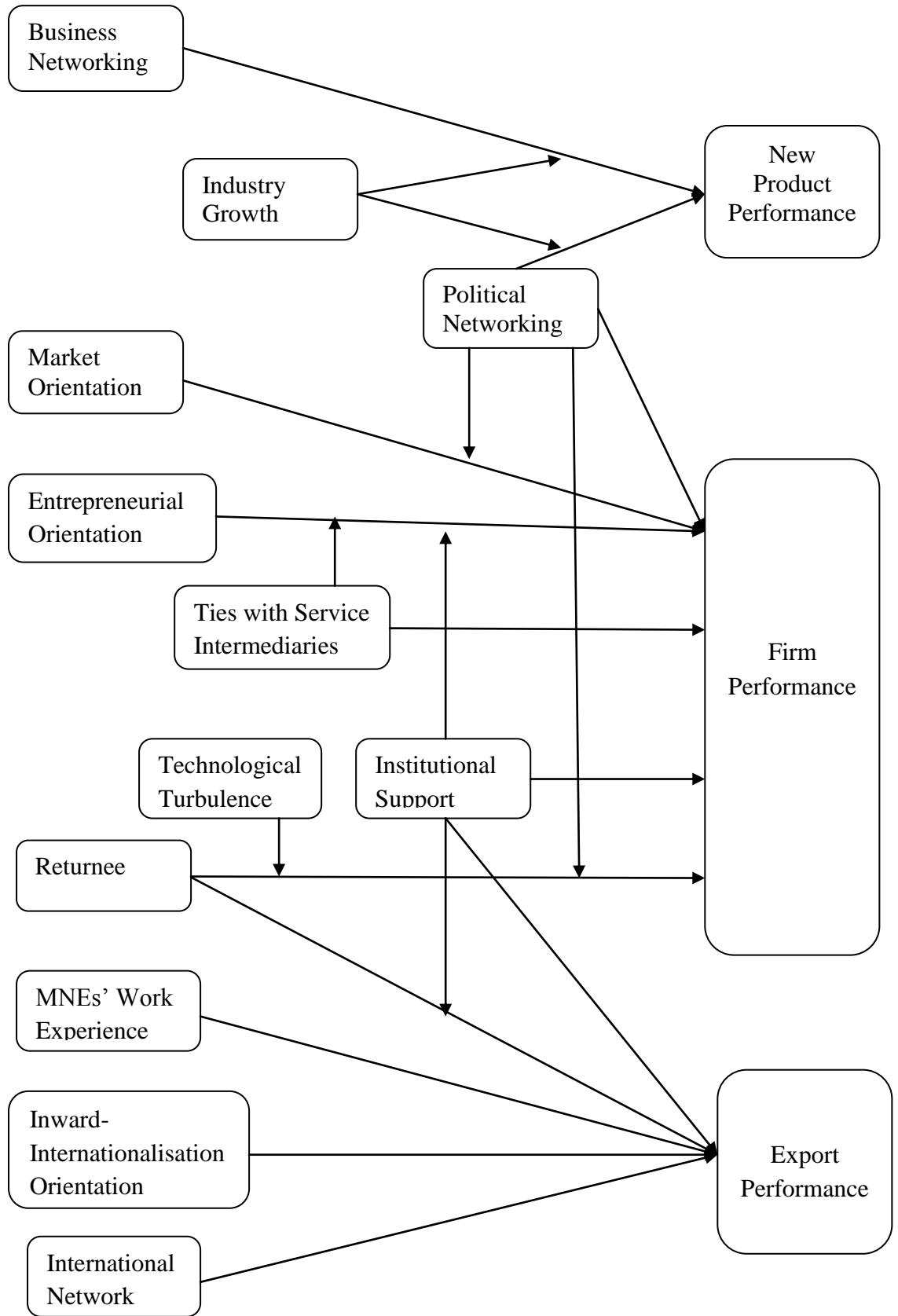
Figue 8.1 Summary of the effects of external and internal determinants on Chinese high-technology SMEs performances

8.4.1 The Role of Managers' Political and Business Networking in High-Technology SMEs New Product Performance: Evidence from China's Emerging Economy

This study examines the effects of political networking and business networking upon high-technology SMEs new product performance in an emerging economy such as China. Our study finds support for the view that both political networking and business networking are positively related to Chinese high-technology SMEs new product performance. Further, this study finds that the positive relationship between political networking and high-technology SMEs new product performance is stronger when perceived industry growth is faster. Nevertheless, the positive relationship between business networking and new product performance is weaker when perceived industry growth is faster. These results indicate that political networking as informal institutional arrangements still exerts strong influence on high-technology SMEs new product performance, despite the institutional environment has improved in China. In addition, the effectiveness of business networking is conditional on external environment condition such as perceived industry growth, which deepens the understanding of new product performance for SMEs in high-technology industry.

8.4.2 The Export Performance of High-Technology SMEs in Emerging Markets: The Effects of Firm Resources and Institutional Support

This study examines the determinants of internationalisation of high-technology SMEs and the performance implications of such behaviours by using the China's emerging economy context. Specifically, this study examines how returnee entrepreneur, the previous entrepreneurs' MNEs work experience, inward internationalisation orientation, international networks, and institutional support are related to expert performance of Chinese high-technology SMEs. This study finds that the entrepreneur's previous work

experience, inward internationalisation orientation and international networks are positively associated with high-technology SMEs export performance. Our result suggests that the presence of a returnee entrepreneur in isolation does not affect export performance of SMEs in high-technology industry in China. Nonetheless, the expected positive relationship between the presence of returnee entrepreneur and export performance is found to be moderated by the degree of technological turbulence. Our study also finds that the link between returnee ventures and export performance is not moderated by institutional support, even though the institutional support exerts a positive impact on export performance of high-technology SMEs. This result suggests that institutional support is a momentous force rather than background conditions helping Chinese high-technology SMEs accelerate internationalisation and boost export performance, regardless of whether those firms are owned by returnee entrepreneurs or by home-grown entrepreneurs.

8.4.3 The Role of Returnee Entrepreneur, Market Orientation and Political Connection in Firm Performance: Evidence from High-Technology SMEs in an Emerging Economy

This study addresses two research questions: (1) how are returnee entrepreneur presences, market orientation, and political connections associated with high-technology SMEs firm performance in an emerging market such as China? (2) How do political connections shape the effectiveness of other internal resources (e.g., returnee presence and market orientation) on high-technology SMEs firm performance? Our results indicate that returnee entrepreneur and market orientation are positively related to firm performance of high-technology SMEs in China. Further, our findings show that the role of political connection affects high-technology SMEs firm performance both directly and indirectly through its interaction with internal factors.

8.4.4 Entrepreneurial Orientation, Ties with Service Intermediaries, Institutional Support and Firm Performance: Evidence from High-Technology SMEs in an Emerging Market

This study explicates how are entrepreneurial orientation, ties with service intermediaries, and institutional support related to high-technology SMEs firm performance in China. Further, this study tends to expound on how and in what manner ties with service intermediaries and institutional support affect the performance implication of entrepreneurial orientation among high-technology SMEs in China. Our findings suggest that entrepreneurial orientation, ties with service intermediaries, and institutional support significantly contribute to high-technology SMEs firm performance. By examining the moderating effects of ties with service intermediaries and institution support on the relationship between entrepreneurial orientation and firm performance, this study corroborates a view that the performance implication of entrepreneurial orientation is conditional on different factors such as ties with service intermediaries and institutional support. Taken together, our findings suggest that taking social capital and institutional factors into consideration offers a good threshold to probe deep into the values of entrepreneurial orientation in emerging economies.

8.5 Contributions of the Study

There are a number of theories and paradigms for explicating the rationales for entrepreneurial firms' survival and prosperity. However, there is an absence of an overarching theory which integrates different theoretical perspectives to expound on entrepreneurial SMEs' strategy and firm performance. As research horizons are now increasingly expanded to emerging and transitional economies such as China, it is critical to know more about "what is going on there" (Peng, 2003). As Xu and Meyer (2013) contend, emerging economies provide a laboratory for investigating the

interaction between firm strategies and local context. However, there is a lack of theoretical and empirical evidence to explain how external and internal factors affect firm performance in the context of high-technology SMEs in China. Indeed theory pluralism characterises the field, and this is reflected in the present study which adopts multiple theoretical frameworks as a foundation. As a consequence, theoretical contributions of this study rest on examination of the applicability of some existing theoretical perspectives rather than on the development of a new theory for high-technology SMEs in an emerging market such as China. If follows that this study seeks to contribute to testing the explanatory power of the theories and paradigms developed in Western, market-based economies in an emerging market context. Specifically, this study adopts the resource-based view of the firm (RBV), the industry-based view (IBV), and institutional theory (IT) in order to better elucidate the determinants of Chinese high-technology SMEs firm performance.

Social capital embedded in the personal networks of entrepreneurs can form an asset or resource for firm (Chisholm and Nielsen, 2009; Stam, Arzlanian, and Elfring, 2014). Furthermore, managerial networking can serve as an informal institutional arrangement in emerging economies (Li, Poppo, and Zhou, 2008; Li and Zhang, 2007; Xin and Pearce, 1996). Existing studies applying social capital and network theory to new technology SMEs in emerging markets has largely focused on obtaining access to resources (Li and Miller, 2006). Our study extends prior research on social networks and helps advance the existing knowledge about the critical role of managerial networking in Chinese high-technology SMEs new product performance. Further, it enriches social capital and network theory by conceptually distinguishing and empirical testing two types of managerial networking: political networking and business networking, and further reveals that political networking still has a stronger performance impact, despite China is shifting from centralist-planned economy to a

more market-driven economy. Previous literature on industrial organisation (or industry-based view) emphasises the role of a firm's competitive environment (Wang et al., 2012). Hence, this study also examines whether the effects of political and business networking are conditional on external environment condition such as perceived industry growth, which deepens the understanding of new product development performance for SMEs in high-technology industry.

This study contributes to the growing body of management research on the internationalisation of entrepreneurial firms by combining elements from diverse perspectives such as the resource-based view of the firm, human capital and social capital, as well as institution theory. Drawing on the resource-based view, this study extends the existing literature on internationalisation of Chinese high-technology SMEs by proposing entrepreneurs' unique human and social capital. In particular, by considering the presence of returnee entrepreneur, international work experience, inward internationalisation orientation and global networks, this study broaden our understanding of drivers of internationalisation of SMEs in the context of China's emerging economy. It also contributes to this line of research by examining how external environment such as technological turbulence could shape the effectiveness of returnee entrepreneur on export performance. Furthermore, by taking the institutional factor such as institutional support into consideration, this study corroborates a view that the role of institution in China is more than background condition, but is an active agent.

In response to a recent call for understanding the determinants of firm performance of entrepreneurial firms from emerging markets, this study adds empirical evidence by examining the effects of different types of managerial resources upon high-technology SMEs firm performance in China. Drawing on the resource-based view of the firm

(RBV), this study empirically examines how are market orientation, returnee entrepreneur, and top managers' political connections related to firm performance. Further, by considering the characteristics of the Chinese institutional environment, findings of this research not only allow us to better understand the direct effect of political connections on assisting high-technology SMEs improve their firm performance, but also enriches our knowledge of how to translate internal resources (e.g. returnee entrepreneur and market orientation) into higher performance in high-technology SMEs in China.

Using the resource-based view (RBV) and institutional theory (IT) as the theoretical foundation, this study examines how are entrepreneurial orientation, ties with service intermediaries, and institutional support associated with firm performance of high-technology SMEs in an emerging economy such as China. In addition, through examining the moderating role of ties with service intermediaries and institutional support in the relationship between entrepreneurial orientation and high-technology SMEs firm performance, this study adds empirical evidence to existing literature on the performance implication of entrepreneurial orientation.

8.6 Managerial Implications of the Study

Managers in high-technology SMEs are advised to overcome liabilities of smallness and newness in emerging markets through establishing external connections with both government officials and business partners. This study suggests that the different types of managerial networking may exert different influences on SMEs new product performance when taking perceived industry growth into consideration. In particular, firms seem to be better able to reap the benefits of political networking in high growth industries. Further, managers in high-technology SMEs should learn how to leverage their business networking for the purpose of innovation when industry growth is high.

This study suggests that the presence of a returnee entrepreneur in isolation does not add additional advantages to promote internationalisation of SMEs in high-technology industry. Rather, returnee entrepreneurs exert their stronger influence on export performance when the level of technological turbulence is higher. Managers in high-technology SMEs need to pay attention to internal resources encompassing previous MNEs' work experience, inward internationalisation orientation and global networks. More importantly, the role of government and institutional contexts play a pivotal role in understanding the behavioural patterns of Chinese firms. Our study helps managers realise that institutional support is an important component when engaging in internationalisation.

Although we find the presence of returnee entrepreneur is not related to high-technology SMEs export performance, we cannot completely rule out its influence on firm performance in China's emerging market. Our study suggests that the presence of returnee entrepreneur is positively associated with high-technology SMEs firm performance. Furthermore, returnee entrepreneurs may consider establishing political connections in order to mitigate their disadvantages and obtain important market information, and thereby, better serving their customers.

This study also helps managers in high-technology SMEs understand entrepreneurial orientation is the backbone for firms to attain success. Managers should strive to develop entrepreneurial orientation to undertake R&D activities, and hence, capturing new business opportunities. Nonetheless, managers should be aware of the context requirements of successful implementation of entrepreneurial orientation. Furthermore, managers may need to pay more attention to broaden their external linkages rather than just focus on the limited personal contacts.

The findings from this study offer some recommendations for managers and entrepreneurs. It seems likely that owner-managers and entrepreneurs in SMEs have been advised to formulate various entrepreneurial strategies to enhance their competitive advantage and boost firm performance in emerging economies. Specifically, this study recommends that entrepreneurs and managers may expend their efforts in establishing different types of connections with government officials, business partners, overseas contacts and service intermediaries to compensate their liabilities of smallness and newness in emerging markets. Further, entrepreneurs and managers should pay increasing attention to developing strategic orientations such as market and entrepreneurial orientation in order to explore and capture the emerging market opportunities in these economies. They also should be cautious that the effectiveness of entrepreneurial strategies might be shaped by conditions of business environment in which the firm participate. Therefore, rather than simply adapting to the environments in a passive way, managers in high-technology SMEs need to proactively commit to developing different managerial visions in order to attain superior firm performance in emerging markets.

The findings presented in this study also confer some implications for policy makers. For policy makers in China, it is important that the government should provide more economic and political incentives aiming at encouraging high-technology SMEs to undertake product innovation and capture emergent opportunities. Further, although managerial networking is crucial to acquire resources, policy makers should make effective institutional arrangements to develop a market system in which firms can benefit from their market-related competitiveness. In addition, this study suggests that government should offer more preferential policies to attract more and better returnees back to China, and continue to undertake reforms to encourage and support returnee ventures in achieving success in both domestic and international markets.

8.7 Limitation and Future Research

This study has several limitations. Firstly, our study offers only limited insights into the role of external and internal determinants in affecting firm performance in the context of high-technology SMEs in an emerging economy such as China. Thus it may be necessary to use qualitative methods (i.e., case studies) to help researchers gain a deeper understanding of how different factors impact on the process of growing. Further, through qualitative methods, future study can explore more factors which may exert influence on high-technology SMEs firm performance.

Secondly, this study is cross-sectional and hence does not allow for causal interpretations among the variables. For example, it may be difficult to use cross-sectional data for detecting the potential endogeneity between firm performance and external networks which are arguably seen as resource-consuming activities. Future studies should be conducted on this issue by applying a longitudinal research. Using longitudinal approach, future research could be enabled to investigate how the different factors change and evolve in the process of economic transition.

Thirdly, the constructs in the study are measured by using perceptual self-reports. It has been observed that managers in Chinese SMEs in general are reticent to disclose their financial performance and report details on assets or profitability. Thus, our study is constrained by the lack of detailed firm level financial data. As Li and Atuahene-Gima (2002) suggest, it is likely that using retrospective data will pose such potential issues as limited recall of the respondents and biased perceptions of past realities. Future research may enrich financial measurements of firm performance such as absolute value of sales.

Finally, our sample is limited to high-technology SMEs in China. Although emerging economies share some common features in their market and institutional environments, they differ significantly in the stages of their economic and institutional development, as

well as in cultural contexts (Sheng et al., 2011). It should be cautious to generalise the results of this study to other emerging economies. Further research may investigate how different factors affect firms' behaviours, and hence helping firms overcome market and institutional hurdles in other emerging market contexts, such as Russia, India, and Brazil. In addition, future research may provide comparative analysis to examine and document the relationship among strategic choices, external environment, and firm performance in both emerging and developed economies.

Appendix A

<u>High-Technology SMEs in an Emerging Market</u>

We are undertaking a research project on an empirical investigation of the effects of external and internal factors on the performance of high-technology SMEs in China's emerging economy. We are particularly interested in the effects of networking, returnee entrepreneur, market orientation, and entrepreneurial orientation on performances of Chinese high-technology SMEs. To help with this research, we would like to invite you to complete the enclosed questionnaire. We would like to stress that your answers to the questions will be treated in the strictest confidence. Neither you nor your company will be identified at any stage of the analysis or in the publication of results.

The questionnaire is designed to be completed by an experienced manager who has a good knowledge of the management and firm strategy. Due to little systematic data exists on high-technology SMEs in China, we hope that the findings of the project will be useful, not only to academic researchers interested in this area, but also to practising managers.

The questionnaire will occupy only a short period of your time, but your answers will be enormously valuable to the research project. If requested, we will be pleased to send you a copy of the research findings. When you have completed the questionnaire, please return it in the enclosed prepaid envelope.

Thanks for your cooperation.

Yours sincerely

Mr Yi Cao   Dr Li Dong

PhD Candidate   Lecturer in International Business

Appendix B

尊敬的

<u>企业创新战略与绩效</u>

我们承担一项中国高科技中小企业绩效分析的研究。我们对人才流动性、企业网络，战略导向，人力资源管理，运行环境，企业创新及运行绩效等问题尤为感兴趣。我们恳请您百忙中填写随函附带的问卷，以帮助此项研究的完成。您的回答将严格保密，在问卷分析和发表的结论中，我们都不会涉及您和贵公司。

敬请贵公司安排一位有经验的经理填写本问卷。他（她）对贵公司管理和发展战略有较好的了解。中国高科技中小型企业的创新战略和绩效是一个新的研究领域，文献中尚缺乏系统数据。我们认为这项研究结论不仅对学术研究者，而且对从事国际企业战略管理实践的经理，有很好的参考价值。

本问卷可能占用您一部分时间，但您的参与和回答对本项研究有很大的贡献，我们深表感谢。如果您需要看到本项研究的结论，我们会十分高兴地给您寄去一份装订精致的，中英文对照的研究总结报告。填写完本问卷后，请您装入已经贴上邮票的信封回复。

　　谢谢您的合作。

　　顺致敬意

　　　　　　　　　　　　　　　　　董理 教授

　　　　　　　　　　　　　　　　　英国伦敦大学皇家霍洛威学院

　　　　　　　　　　　　　　　　　曹燊

　　　　　　　　　　　　　　　　　英国伦敦大学皇家霍洛威学院博士研究生

Appendix C

CONFIDENTIAL

The Effects of External and Internal Factors on Firm Performance of High-Technology SMEs in China

The survey aims to explore how Chinese high-technology small- and medium-sized enterprises (SMEs) develop their innovative capabilities to achieve competitiveness in the global market. Please note:

(1) High-technology SMEs are firms that located in high-tech industries. Generally, a SME employs less than 500 people.

(2) The questionnaire is divided into eight sections. Most of the questions ask you to choose the alternative that best fits your views on the topic. For instance, if you strongly disagree with the statement then circle (1), if you strongly agree with the statement then circle (5). The numbers (2), (3), and (4) enable you to indicate intermediate positions such as 'disagree', 'neither' and 'agree' in between these two extremes.

(3) We estimate that it will take about 20 – 30 minutes to complete the questionnaire.

(4) Your responses will be treated in the strictest confidence and only be used for aggregated statistical analyses. Neither you nor your company will be identified during the analysis or publication of results.

Thank you very much for your cooperation.

Yours Sincerely

Mr Yi Cao   Dr Li Dong

PhD Candidate   Lecturer in International Business

School of Management   School of Management

Royal Holloway, University of London   Royal Holloway, University of London

Email: *Yi.Cao.2007@live.rhul.ac.uk*

Part 1 Background Information

1. Your job title is:
   [   ] Founder/Chairman
   [   ] Chief Executive Officer (CEO)/General Manager/Managing director
   [   ] R&D Manager/Chief Engineer
   [   ] Others _____
2. Gender: [   ] Male   [   ] Female
3. Age: [   ] 29 or less   [   ] 30-40   [   ] 41-50   [   ] 51 and above
4. How many years have you been in your current employment?
   [   ] Less than 3 years   [   ] Between 3 and 5 years   [   ] More than 5 years
5. Please indicate your highest qualification:
   [   ] Undergraduate degree level
   [   ] Postgraduate/ Master's level or equivalent
   [   ] Doctorate degree level
   [   ] Professional qualification
   [   ] Others _____
6. Please indicate the legal status of your firm:
   [   ] State-owned enterprises
   [   ] Collective enterprises
   [   ] Privately-owned enterprises
   [   ] Foreign-invested enterprises
   [   ] Joint ventures
   (What share of the equity is held by your firm? [ ] More than 50%   [ ] Equal to 50%   [ ] Less than 50%)
   [   ] Others (e.g. Township Enterprises)   (Please specify _____)
7. This company is founded in the year of _____
   How many employees does the company currently have? About ____ employees
   How many middle and senior managers are there in your company? About _____middle and senior managers
   In average, how many years have senior managers in your firm worked in the current industry? _____years
   How many scientists and engineers in your company? _____scientists and engineers
   What were total assets of your company in the last year (2011)? About _____(RMB)
   What were total sales of your company in the last year (2011)? About _____(RMB)
   What is R&D expenditure as a percentage of total sales in your firm? _____%
   What is foreign technology and equipment investment as a percentage of total sales in your firm? _____%
   What is export sale as a percentage of total sales in your firm? _____%

8. Please rate the level of members of senior management have had functional experience in the following areas:

		Poor	Fair	Average	Good	Excellent
1	R&D / Engineering	1	2	3	4	5
2	Sales / Marketing	1	2	3	4	5
3	Manufacturing	1	2	3	4	5
4	Finance	1	2	3	4	5
5	Administration	1	2	3	4	5

9. Please indicate the category of industry that best fits your company:
   [ ] Electronics and information technology
   [ ] Bio-engineering and new medical technology
   [ ] New materials and applied techniques
   [ ] New energy and high-power conservation technology
   [ ] Environmental protection technology   [ ] Modern agricultural technology
   [ ] Advanced manufacturing technology   [ ] Aviation and space technology
   [ ] Nuclear-applied technology   [ ] Marine engineering technology
   [ ] Other _____

10. Please indicate the location of your company: ____(Province/Municipality directly under the central government)

Part 2 Human Mobility

1. Was your firm founded by a returning entrepreneur or scientist who had at least two years of commercial or educational experience in an OECD country (i.e., U.S.A., Canada, U.K., Germany, France, Australia, Japan, etc.)?
   [ ] Yes   [ ] No

2. Does your firm have any returning managers or staffs who had at least two years of commercial or educational experience in an OECD country?
   [ ] Yes   [ ] No

3. Have any of your firm's founders or managers had work experience in foreign multinational enterprises?
   [ ] Yes   [ ] No

4. In which year did the returnee founders or managers return to China? _____

5. Founders or managers in your firm stayed outside China mainly for:
   [ ] Education   [ ] Business   [ ] Both education and business

6. What kind of education experience did returning founders or managers have when they were abroad?
   [ ] Student   [ ] Academic research

7. Had the founder of your firm already set up a company abroad before returning to China?
   [ ] Yes   [ ] No

8. To what extent do you think the following factors were important for your firm's returning founders or managers' decision to return to China?

		least Important				Most Important
1	Exploit Chinese market	1	2	3	4	5
2	Exploit both Chinese and foreign markets	1	2	3	4	5
3	Exploit networks established abroad	1	2	3	4	5
4	Exploit new technology obtained abroad	1	2	3	4	5
5	Government incentives for returnees	1	2	3	4	5
6	Achieve synergy between international and local networks	1	2	3	4	5
7	Exploit lower costs in China	1	2	3	4	5
8	Access to local skills in China	1	2	3	4	5
9	Family reasons	1	2	3	4	5

9. How long do you think it would take for your firm to catch up with returnee firms and foreign multinational enterprises (MNEs) in terms of technology?
[ ] Less than three years   [ ] Three years   [ ] More than three years

10. Have any of your firm's founders or managers transferred foreign patents and licences from abroad to China?
[ ] Yes   (If 'Yes', how many patents or licences have been transferred? _____)
[ ] No

11. Have any of your managers had regular interaction with other returnee entrepreneurs?
[ ] Yes   [ ] No

12. What kinds of interactions have your founders and managers usually maintained with other returnee entrepreneurs?

Formal contact	Business links, cooperation, and meetings organised by government/cluster management committee	[ ] Yes [ ] No
Informal contact	Joining the same professional associations, friends, former classmates and/or alumni	[ ] Yes [ ] No

13. The locations of your main business networks:
[ ] China   [ ] Abroad   [ ] Both in China and abroad

14. To what extent do you think the following items are important for the growth of your venture?

		Least Important				Most Important
1	Business networks established in foreign markets	1	2	3	4	5
2	Contacts maintained with people in foreign countries	1	2	3	4	5
3	Membership of different associations abroad	1	2	3	4	5

15. To what extent do you think the following types of knowledge have been important in

		Least Important				Most Important
1	International new technological ideas	1	2	3	4	5
2	Local new technological ideas	1	2	3	4	5
3	International new business ideas, and opportunities	1	2	3	4	5
4	Local new business ideas, and opportunities	1	2	3	4	5
5	International marketing knowledge	1	2	3	4	5
6	Local Marketing knowledge	1	2	3	4	5
7	International financial knowledge	1	2	3	4	5
8	Local financial knowledge	1	2	3	4	5

the growth of your venture?

Part 3 External Linkages

1. Please circle the appropriate number to indicate the extent to which each statement describes linkages established by your firm.

		Very Low	Low	Neutral	High	Very High
1	Linkages to customers	1	2	3	4	5
2	Linkages to suppliers	1	2	3	4	5
3	Linkages to competitors	1	2	3	4	5
4	Linkages to innovation services department	1	2	3	4	5
5	Linkages to information services department	1	2	3	4	5
6	Linkages to regulatory and supervisory department	1	2	3	4	5
7	Linkages to technology intermediaries	1	2	3	4	5
8	Linkages to industrial associations	1	2	3	4	5
9	Linkages to venture capital organisations	1	2	3	4	5
10	Linkages to universities	1	2	3	4	5
11	Linkages to research institutions	1	2	3	4	5
12	Linkages to colleges or technical institutes	1	2	3	4	5

2. Please circle the appropriate number to indicate the extent to which each statement describes your firm's cooperation with service intermediaries.

		To no extent	To a little extent	To some extent	To a moderate extent	To a great extent
1	Technology service firms	1	2	3	4	5
2	Accounting and financial service firms	1	2	3	4	5
3	Law firms	1	2	3	4	5
4	Talent search firms	1	2	3	4	5

3. Please circle the appropriate number to indicate the extent to which you agree or disagree with each statement in relation to top managers' political networking.

Our firm's senior managers over the past three years have...

		Strongly Disagree				Strongly Agree
1	Spent much effort in cultivating personal connections with officials of government and its agencies	1	2	3	4	5
2	Maintained good relationships with officials of state banks and other governmental agencies	1	2	3	4	5
3	Devoted substantial resources to maintain good relationships with officials of administrative agencies	1	2	3	4	5
4	Spent a lot of money on building relations with the top officials in government	1	2	3	4	5

4. Please circle the appropriate number to indicate the extent to which you agree or disagree with each statement in relation to top managers' business networking.

Top managers at our firm have built good connections with...

		Strongly Disagree				Strongly Agree
1	Managers at buyer firms	1	2	3	4	5
2	Managers at supplier firms	1	2	3	4	5
3	Managers at competitor firms	1	2	3	4	5
4	Managers at other business intermediaries	1	2	3	4	5

5. Please circle the appropriate number to indicate the extent to which you agree or disagree with each statement in relation to your firm's product development alliance.

Our firm has...

		Strongly Disagree				Strongly Agree
1	Entered into cooperative agreements with other firms to design and manufacture new products	1	2	3	4	5
2	Collaborated with other firms to market new products	1	2	3	4	5
3	Joined with other firms to introduce new products	1	2	3	4	5
4	Jointly promoted new product lines with other firms	1	2	3	4	5
5	Jointly distributed and provided support services for new products with other firms	1	2	3	4	5
6	Established cooperative agreements with other firms and institutions for R&D	1	2	3	4	5

6. Please indicate whether your firm has been involved in any business as an agent to market and distribute a foreign firm's products and services in China?
   [ ] Yes   [ ] No

7. Please indicate the extent to which the products you are marketing and distributing for foreign firms are related to your venture's own products.

Not at all	To a little extent	To some extent	To a moderate extent	To a large extent
1	2	3	4	5

Part 4 Strategic Orientations

1. Please circle the appropriate number to indicate the extent to which you agree or disagree with each statement in relation to your firm's entrepreneurial orientation.

		Strongly Disagree				Strongly Agree
1	In general, the top managers of our firm favour a strong emphasis on R&D, technological leadership, and innovations	1	2	3	4	5
2	In general, the top managers of my firm have a strong propensity for high-risk projects (with chances of very high return)	1	2	3	4	5
3	In dealing with its competitors, our firm typically initiates actions to which competitors then respond	1	2	3	4	5
4	Our firm is very often the first business to introduce new products or services, administrative techniques, operating technologies, etc.	1	2	3	4	5
5	Our firm typically adopts a very competitive posture aiming at overtaking the competitors	1	2	3	4	5

2. Please circle the appropriate number to indicate the extent to which you agree or disagree with each statement in relation to your firm's international entrepreneurial orientation.

		Strongly Disagree				Strongly Agree
1	Top management tends to see the world, instead of just China, as our firm's marketplace	1	2	3	4	5
2	Our top management is experienced in international business	1	2	3	4	5
3	Our firm has marketed its main products in foreign markets	1	2	3	4	5
4	Management communicates information throughout the firm with respect to about our successful and unsuccessful customer experiences abroad	1	2	3	4	5
5	Vision and drive of top management are important in our decision to enter foreign markets	1	2	3	4	5

3. Please circle the appropriate number to indicate the extent to which you agree or disagree with each statement in relation to your firm's internationalisation orientation strategy.

		Strongly Disagree				Strongly Agree
1	Our firm aggressively seek foreign markets	1	2	3	4	5
2	Our firm develop alliances with foreign partners	1	2	3	4	5
3	Our firm utilised advanced management skills from foreign countries	1	2	3	4	5
4	Our firm utilised advanced and new technology from foreign countries	1	2	3	4	5
5	Our firm utilised foreign direct investment	1	2	3	4	5

4. Please circle the appropriate number to indicate the extent to which you agree or disagree with each statement in relation to your firm's market orientation.

		Strongly Disagree				Strongly Agree
1	Our understanding of customers' needs is a source of competitiveness.	1	2	3	4	5
2	We are more customers focused than our competitors	1	2	3	4	5
3	We poll end users at least once per year to assess the quality of our products and services	1	2	3	4	5
4	Our business objectives are driven primarily by customer satisfaction	1	2	3	4	5
5	We measure customer satisfaction systematically and frequently	1	2	3	4	5
6	We have routine or regular measures of customer service	1	2	3	4	5
7	We continually monitor customers and competitors to find new ways to improve customer satisfaction	1	2	3	4	5
8	Data on customer satisfaction are disseminated all levels in this business on a regular basis	1	2	3	4	5

5. Please circle the appropriate number to indicate the extent to which you agree or disagree with each statement in relation to your firm's work environment.

		Strongly Disagree				Strongly Agree
1	Employees are friendly and supportive of one another	1	2	3	4	5
2	Management is supportive of employees and encourages employees to be supportive of one another	1	2	3	4	5
3	There is a lot of group spirit in this organisation	1	2	3	4	5
4	Management is friendly and approachable	1	2	3	4	5

Part 5 Human Resources

1. Please circle the appropriate number to indicate the extent to which you agree or disagree with each statement in relation to human resource (HR) practices in your firm.

		Strongly Disagree				Strongly Agree
1	Our staff selection process is rigorous	1	2	3	4	5
2	Our performance appraisals emphasise outcomes	1	2	3	4	5
3	Our compensation package is designed to be more competitive than other firms in the industry	1	2	3	4	5
4	We provide a considerable amount of training	1	2	3	4	5
5	We try to keep employee turnover to a minimum	1	2	3	4	5
6	In determining compensation, we emphasise the individual's contributions more than job title	1	2	3	4	5
7	Our remuneration package is designed to reward long-term employees	1	2	3	4	5
8	Employee behaviour is a key component to performance appraisal	1	2	3	4	5
9	We primarily hire applicants that currently possess the necessary knowledge and skills	1	2	3	4	5
10	On-the-job training is more important than formal education or experience with other organisations	1	2	3	4	5
11	We emphasise external pay comparability in determining compensation	1	2	3	4	5
12	Our remuneration package is intended to promote employee retention	1	2	3	4	5
13	We intend to keep large salary differences between high and low performers in the same position	1	2	3	4	5
14	Employees transfer to new functional areas or new units are used as a development activity in our firm	1	2	3	4	5
15	We have a sufficient training budget	1	2	3	4	5

2. Please circle the appropriate number to indicate the extent to which you agree or disagree with each statement in relation to knowledge exchange and combination in your firm.

		Strongly Disagree				Strongly Agree
1	Employees see benefits from exchanging and combining ideas with one another	1	2	3	4	5
2	Employees believe that by exchanging and combining ideas they can move new projects or initiatives forward more quickly than by working alone	1	2	3	4	5
3	At the end of each day, our employees feel that they have learned from each other by exchanging and combining ideas	1	2	3	4	5
4	Employees at this company are proficient at combining and exchanging ideas to solve problems or create opportunities	1	2	3	4	5

		Strongly Disagree				Strongly Agree
5	Employees do not do a good job of sharing their individual ideas to come up with new ideas, products, or services	1	2	3	4	5
6	Employees are capable of sharing their expertise to bring new projects or initiatives to fruition	1	2	3	4	5
7	Employees are willing to exchange and combine ideas with their co-workers	1	2	3	4	5
8	It is rare for employees to exchange and combine ideas to find solutions to problems	1	2	3	4	5

Part 6 Environment

1. Please circle the appropriate number to indicate the extent to which you agree or disagree with each statement in relation to demand uncertainty over the last three years.

		Strongly Disagree				Strongly Agree
1	In this industry, customers tend to look for new products all the time	1	2	3	4	5
2	Customers' preferences change frequently over time	1	2	3	4	5
3	Market demand is difficult to forecast in this industry	1	2	3	4	5
4	The evolution of customer preference is difficult to predict	1	2	3	4	5

2. Please circle the appropriate number to indicate the extent to which you agree or disagree with each statement in relation to technological turbulence over the last three years.

		Strongly Disagree				Strongly Agree
1	The technology in this industry is changing rapidly	1	2	3	4	5
2	Technological changes provide substantial opportunities in this industry	1	2	3	4	5
3	A large number of new product ideas have been made possible through technological breakthroughs in this industry	1	2	3	4	5

3. Please circle the appropriate number to indicate the extent to which you agree or disagree with each statement in relation to competitive intensity over the last three years.

		Strongly Disagree				Strongly Agree
1	There are many 'promotion wars' in this industry	1	2	3	4	5
2	Any product that a company can offer, others can easily match	1	2	3	4	5
3	Price competition is a hallmark of this industry	1	2	3	4	5

4. Please circle the appropriate number to indicate the extent to which you agree or disagree with each statement in relation to environmental dynamism over the last three years.

		Strongly Disagree				Strongly Agree
1	Actions of local and foreign competitors have been highly unpredictable	1	2	3	4	5
2	Market demand and customer tastes have been unpredictable	1	2	3	4	5
3	Customers' preferences change quickly over time	1	2	3	4	5
4	The rate at which products or services become obsolete has dramatically increased	1	2	3	4	5

5. Please circle the appropriate number to indicate the extent to which you agree or disagree with each statement in relation to industry growth over the last three years.

		Strongly Disagree				Strongly Agree
1	There has been high growth in demand in this industry	1	2	3	4	5
2	This industry offered many attractive opportunities for future growth	1	2	3	4	5
3	Growth opportunities in this industry have been abundant	1	2	3	4	5

6. Please circle the appropriate number to indicate the extent to which each of these statements describes dysfunctional competition over the last three years.

		Very Low				Very High
1	Unlawful competitive practices such as illegal copying of new products	1	2	3	4	5
2	Counterfeiting of your own products and trademarks by other firms	1	2	3	4	5
3	Ineffective market competitive laws to protect your firm's intellectual property	1	2	3	4	5
4	Increased unfair competitive practices by other firms in the industry	1	2	3	4	5

7. Please circle the appropriate number to indicate the extent to which you agree or disagree with each statement in relation to institutional support over the last three years.

		Strongly Disagree				Strongly Agree
1	Implemented policies and programmes that have been beneficial to business operation	1	2	3	4	5
2	Provided needed technology information and other technical support	1	2	3	4	5
3	Played a significant role in providing financial support	1	2	3	4	5
4	Helped firms obtain licenses for imports of technology, manufacturing and raw material, and other equipment	1	2	3	4	5

Part 7 Innovation Performance

1. How many patents has your firm submitted since founding? _____
   How many patents has your firm been granted since founding? _____
2. How many utility models and designs that were registered to the Chinese Patents Administration since founding? _____
3. How many foreign and domestic quality assurance marks acquired since founding? _____
4. What is the average proportion of annual turnover of new products to total annual turnover in the preceding three years? Please choose one from below.

1	2	3	4	5
<10%	10 – 15%	15 – 30%	30 – 50%	>50%

5. What is the average proportion of current sales from newly introduced products in the preceding three years?

1	2	3	4	5
<10%	10 – 15%	15 – 30%	30 – 50%	>50%

6. What is the average proportion of current sales from modified products in the preceding three years?

1	2	3	4	5
<10%	10 – 15%	15 – 30%	30 – 50%	>50%

7. To what extent do these statements describe your firm's new product performance over the last three years relative to your competitors?

		Very Weak	Weak	Average	Strong	Very Strong
1	Sales growth	1	2	3	4	5
2	Market share growth	1	2	3	4	5
3	Growth in profit	1	2	3	4	5
4	Return on investment	1	2	3	4	5

Part 8 Firm Performance

1. Compared with your competitors, please rate the extent to which each statement describes your firm performance in China over the last three years. (1= Very Weak; 5= Very Strong)

		Very Weak	Weak	Average	Strong	Very Strong
1	Sales growth	1	2	3	4	5
2	Market share growth	1	2	3	4	5
3	Growth in profit	1	2	3	4	5
4	Return on investment (ROI)	1	2	3	4	5
5	Return on sales (ROS)	1	2	3	4	5
6	Return on assets (ROA)	1	2	3	4	5
7	Pre-tax profit growth rate	1	2	3	4	5
8	Cash flow from market operations	1	2	3	4	5
9	Gaining new knowledge/technology	1	2	3	4	5
10	Growth in the number of employees	1	2	3	4	5
11	Net profit margin	1	2	3	4	5
12	Competitive position	1	2	3	4	5
13	Customer satisfaction	1	2	3	4	5
14	Overall efficiency of operations	1	2	3	4	5
15	Firm's overall reputation	1	2	3	4	5

2. Please indicate the extent to which you have been satisfied with the following aspects of your products in its main export market over the past three years.

		Not at all satisfied	Slightly satisfied	Moderately satisfied	Satisfied	Very satisfied
1	Sales growth in international markets	1	2	3	4	5
2	Pre-tax profitability of sales in international markets	1	2	3	4	5
3	Market shares in international markets	1	2	3	4	5
4	Return on Investment in international markets	1	2	3	4	5

3. Compared with your competitors, how would you rate the success of your main product in export market over the past three years?

Not successful	Slightly successful	Moderately successful	Successful	Very Successful
1	2	3	4	5

Thank you very much for your assistance. If you are willing to discuss further any of the issues raised in this questionnaire, please don't hesitate to contact us.

(1) Would you be interested in receiving a summary report of the findings?

[   ] Yes   [   ] No

(2) If 'Yes', please write down your contact details below:

Name: _____

Address: _____

Email: _____

Appendix D

中国高科技中小型企业的绩效分析

我们目前正进行一项'中国高科技中小型企业如何在国际国内市场上建立竞争优势提高绩效'的课题研究。请注意：

（1）高科技中小型企业是指在高科技行业中的中小企业。通常，公司员工数目不超过 500 人。

（2）该问卷分八个部分。大多数问题需要您来选择最能代表您同意程度的数字。如果您想表达强烈不同意，请选择①，如果您想表达强烈同意，请选择⑤。数字② ③ ④表明在上述两者之间的不同程度。

（3）预计填写本问卷会占用您 20 – 30 分钟。

（4）对您所提供的资料将绝对保密而且只用于汇总统计分析。您和贵公司的信息在研究分析或结果公布的过程中都不会被泄漏。

感谢您在百忙之中填写这份调查问卷表。

一、背景资料

1. 您的职务或职称：

【 】创始人\董事长\总裁\副总裁 【 】首席执行官\总经理\总监 【 】研发经理\首席工程师

【 】其他_____

2. 性别：【 】男　　　　　　【 】女

3. 年龄：【 】29 岁及以下　　【 】30 – 40 岁　　【 】41-50 岁　　　【 】51 岁及以上

4. 您在本公司已工作：【 】小于 3 年　　【 】3 到 5 年　　【 】5 年以上

5. 您的最高学历是什么？

【 】本科　　　　【 】研究生或同等学历　　　【 】博士　　　　【 】职业资格证书

【 】其他：_____

6. 公司的企业类型是什么？

【 】国有企业　　【 】集体企业　　　【 】私营企业　　　　　【 】外商独资企业

【 】合资企业（贵公司所占股份：【 】大于 50% 【 】50% 　【 】小于 50%）

【 】其他（比如，乡镇企业）请您注明：_____

7. 企业成立的时间_____年；贵企业职工人数_____ 人；中高层经理的人数_____ 人；
高层经理在本行业工作的平均年数_____年；科研人员和工程师的人数 _____ 人；公司总资产_____元（2011）；总销售额_____元（2011）；每年投入的研发经费占公司总销售额的百分比 _____%；购买外国的技术和设备上的投资占公司总销售额的百分比_____%；
出口销售额占公司总销售额的百分比_____%

8.请表明贵公司高层经理在下列工作领域中的专业经验程度：

		非常低	比较低	中等	比较高	非常高
（1）	研发或工程	1	2	3	4	5
（2）	销售或市场	1	2	3	4	5
（3）	制造	1	2	3	4	5
（4）	金融	1	2	3	4	5
（5）	管理	1	2	3	4	5

9. 请选择贵公司所在的行业类别：

【 】电子和信息技术　　　　　【 】生物工程和新医药技术　　　【 】新材料及应用技术

【 】新能源和大功率节能技术　【 】环境保护技术　　　　　　　【 】现代农业技术

【 】先进制造技术　　　　　　【 】航天与太空技术　　　　　　【 】核应用技术

【 】海洋工程技术　　　　　　【 】其他＿＿＿＿＿＿＿＿＿＿＿

10. 您公司的地理位置在＿＿＿＿＿＿＿省/直辖市

二、人才流动性

1. 贵公司是否由海外归来的企业家或科研人员（在任何一个经合组织国家，比如，美国，加拿大，英国，德国，法国，澳大利亚，日本等，待过 2 年以上的人）所创建？

【 】是　　　　　　　【 】不是

2. 贵公司里是否有海外归来的企业家或科研人员（在任何一个经合组织国家，比如，美国，加拿大，英国，德国，法国，澳大利亚，日本等，待过 2 年以上的人）？

【 】有　　　　　　　【 】没有

3. 贵公司的创始人或经理有在国际跨国公司工作的经历吗？

【 】有　　　　　　　【 】没有

4.贵公司海外归来的创始人或经理是哪一年回国的？＿＿＿＿＿＿＿＿＿＿年

5. 贵公司创始人或经理出国的主要原因是：

【 】教育　　　　　　　【 】商务　　　　　　　【 】两者皆有

6. 贵公司创始人或经理出国的教育经历是：

【 】学生　　　　　　　　【 】学术研究

7. 贵公司创始人在归国前有在海外创建过公司吗？

【 】有　　　　　　　　【 】没有

8. 就以下影响海归创始人或经理做出回国决定的因素而言，请圈选合适的数字来表明每项的重要程度。

		不重要				十分重要
（1）	开发中国市场	1	2	3	4	5
（2）	开发中国和国际市场	1	2	3	4	5
（3）	利用在国外建立的关系网	1	2	3	4	5
（4）	利用在国外获得的技术	1	2	3	4	5
（5）	政府对海归的引才计划	1	2	3	4	5
（6）	实现国内外关系网的共赢	1	2	3	4	5
（7）	利用中国的低价成本	1	2	3	4	5
（8）	接触到中国本土技术	1	2	3	4	5
（9）	家庭原因	1	2	3	4	5

9. 就技术而言，您认为贵公司多久就可赶超海外归国企业家建立的公司或是国际跨国公司？

【 】3 年以下　　　　　【 】3 年　　　　　　　【 】3 年以上

10. 公司创始人或经理从国外有引进过专利和技术许可证吗？

【 】有　（如果有，迄今为止已经引进多少专利和技术许可证？_____个）

【 】没有

11. 公司的经理会经常联络其他海归企业家吗？

【 】会经常联系　　　　　　　【 】不会经常联系

12. 公司经理是用怎样的方式联络接触其他海外归国企业家的？

正式联络	商业联系，合作，参加政府组织的各种会议，以及高新科技开发区管委会组织的各种聚会	【 】有参加	【 】没有参加
非正式联络	加入专业协会的会员，朋友，以前的同学及校友	【 】有参加	【 】没有参加

13. 贵公司主要商业关系网的地点为：

【 】中国　　　　【 】海外　　　　【 】中国和海外

14. 您认为以下各项对贵公司成长的重要性如何？

		不重要				非常重要
（1）	在主要市场建立的商业网络	1	2	3	4	5
（2）	维持各种海外联系	1	2	3	4	5
（3）	成为各种海外协会的会员	1	2	3	4	5

15. 您认为以下不同类型的知识对公司成长的重要程度如何？

		不重要				十分重要
（1）	国际新技术理念和联系	1	2	3	4	5
（2）	国内新技术理念和联系	1	2	3	4	5
（3）	国际新商业理念，机会和联系	1	2	3	4	5
（4）	国内新商业理念，机会和联系	1	2	3	4	5
（5）	国际市场知识和联系	1	2	3	4	5
（6）	国内市场知识和联系	1	2	3	4	5
（7）	国际金融知识和联系	1	2	3	4	5
（8）	国内金融知识和联系	1	2	3	4	5

三、对外联系

1. 请您圈选合适的数字来表明以下各项关于贵公司和外界联系的密切程度。

		程度很小				程度很大
（1）	和顾客的联系程度	1	2	3	4	5
（2）	和供货商的联系程度	1	2	3	4	5
（3）	和竞争对手的联系程度	1	2	3	4	5
（4）	和政府创新服务部门的联系程度	1	2	3	4	5
（5）	和政府信息服务部门的联系程度	1	2	3	4	5
（6）	和政府立法和监管机构的联系程度	1	2	3	4	5
（7）	和技术中介机构的联系程度	1	2	3	4	5
（8）	和行业协会的联系程度	1	2	3	4	5
（9）	和风投机构的联系程度	1	2	3	4	5
（10）	和大学的联系程度	1	2	3	4	5
（11）	和研究所的联系程度	1	2	3	4	5
（12）	和学院与技术学校的联系程度	1	2	3	4	5

3. 请圈选合适的数字来表明以下各项关于贵公司与服务中介联系的密切程度。

		程度很小				程度很大
（1）	技术服务公司	1	2	3	4	5
（2）	会计和金融服务公司	1	2	3	4	5
（3）	法律公司	1	2	3	4	5
（4）	人才猎头公司	1	2	3	4	5

3. 就贵公司高管的政治关系网而言，请圈选合适的数字来表明您在什么程度上同意或不同意下面各项陈述。

我们公司的高管在过去三年里...	强烈不同意				强烈同意
（1）付出很多努力来培养自己与各级政府官员的私人联系	1	2	3	4	5
（2）与国有银行和其他政府机构的官员保持良好的关系	1	2	3	4	5
（3）投入大量资源与行政机关的官员们保持良好关系	1	2	3	4	5
（4）投资很多钱与政府高级官员建立联系	1	2	3	4	5

4. 就贵公司高管的商业关系网而言，请圈选合适的数字来表明您在什么程度上同意或不同意下面各项陈述。

我们公司的高管与...联系很密切	强烈不同意				强烈同意
（1）买方公司的高层经理	1	2	3	4	5
（2）卖方公司的高层经理	1	2	3	4	5
（3）竞争对手公司的高层经理	1	2	3	4	5
（4）中介机构中的高层经理	1	2	3	4	5

5. 就贵公司建立的产品开发联盟而言，请圈选合适的数字来表明您在什么程度上同意或不同意下面各项陈述。

我们公司...	强烈不同意				强烈同意
（1）与其他公司签订合作协议来共同设计和生产新产品	1	2	3	4	5
（2）与其他公司合作营销新产品	1	2	3	4	5
（3）联合其他公司一起上市新产品	1	2	3	4	5
（4）联合其他公司改进新产品线	1	2	3	4	5
（5）与其他公司一起分销和提供新产品支持服务	1	2	3	4	5
（6）与其他公司或机构签订合作协议来共同研发	1	2	3	4	5

6.请表明贵公司是否为外国公司的产品和服务进入中国做过市场和分销的中介生意？

【 】做过　【 】没做过

7. 请表明贵公司为外国公司做市场和分销的产品与贵公司自己的产品之间的相关程度。

相关程度非常低	比较低	中等	比较高	相关程度非常高
1	2	3	4	5

四、战略导向

1. 就公司的创业导向而言，请圈选合适的数字来表明您在什么程度上同意或不同意下面各项陈述。

		强烈不同意				强烈同意
（1）	一般来讲，我们公司的高管非常强调研发，技术领先和创新	1	2	3	4	5
（2）	我们公司的高管一般对风险很高的项目（即有机会取得高回报）有很强的倾向性	1	2	3	4	5
（3）	就应付竞争对手而言，我们公司经常引领竞争，主动发起竞争去积极对付竞争对手	1	2	3	4	5
（4）	我们公司经常会第一个去推广新产品或新服务，行政管理和运营技术等	1	2	3	4	5
（5）	我们公司基本采取竞争战略去超越对手	1	2	3	4	5

2. 就公司的国际创业理念而言，请圈选合适的数字来表明您在什么程度上同意或不同意下面各项陈述。

		强烈不同意				强烈同意
（1）	公司高管看重全球市场而不会仅局限于中国市场	1	2	3	4	5
（2）	公司高层有丰富的国际商务的经验	1	2	3	4	5
（3）	在过去的三年中我们公司在海外上市了很多产品	1	2	3	4	5
（4）	管理层经常与公司各层交流与海外客户打交道的成败经验	1	2	3	4	5
（5）	公司高层的战略目标和动机对于公司决定进入海外市场是很重要的	1	2	3	4	5

3. 就公司的国际化导向战略而言，请圈选合适的数字来表明您在什么程度上同意或不同意下面各项陈述。

		强烈不同意				强烈同意
（1）	我们公司极力寻找海外市场	1	2	3	4	5
（2）	我们公司与外国合作者建立联盟关系	1	2	3	4	5
（3）	我们公司使用国外先进的管理技巧	1	2	3	4	5
（4）	我们公司使用国外先进的技术	1	2	3	4	5
（5）	我们公司使用对外直接投资	1	2	3	4	5

4. 就公司的市场营销理念而言，请圈选合适的数字来表明您在什么程度上同意或不同意下面各项陈述。

		强烈不同意				强烈同意
（1）	理解顾客的需求是我们公司竞争优势之一	1	2	3	4	5
（2）	我们公司比同行对手更关注客户	1	2	3	4	5
（3）	我们一年至少收集一次客户对于我们产品和服务质量的回馈信息					
（4）	顾客的满意度是我们公司制定商业目标的主要动力					
（5）	我们经常系统性的衡量顾客对我们的满意度	1	2	3	4	5
（6）	我们对于客服有固定和规律性的评价方法	1	2	3	4	5

（7）	我们公司以持续性的关注顾客和竞争对手来发掘新的方法去提高顾客的满意度	1	2	3	4	5
（8）	对于顾客满意度的数据在公司各部门间规律性的传阅	1	2	3	4	5

5. 就公司的工作环境而言，请圈选合适的数字来表明您在什么程度上同意或不同意下面各项陈述

		完全不同意				非常同意
（1）	员工之间互助友善	1	2	3	4	5
（2）	管理层支持并鼓励员工互相帮助	1	2	3	4	5
（3）	团队精神在公司中很重要	1	2	3	4	5
（4）	管理层平易近人	1	2	3	4	5

五、人力资源

1. 就贵公司的人力资源实践而言，请圈选合适的数字来表明您在什么程度上同意或不同意下面各项陈述。

		强烈不同意				强烈同意
（1）	我们公司有严格的员工选拔过程	1	2	3	4	5
（2）	我们公司的绩效评估强调结果	1	2	3	4	5
（3）	我们公司的薪酬组合比同行业其他公司更优越	1	2	3	4	5
（4）	我们公司提供可观的员工培训	1	2	3	4	5
（5）	我们公司努力使员工离职率降到最低	1	2	3	4	5
（6）	在决定薪金补偿时，我们看重的是员工的个人贡献而不是员工的职位	1	2	3	4	5
（7）	我们的报酬体系是为奖励企业长期员工而设定的	1	2	3	4	5
（8）	员工的行为是绩效评估的主要方面	1	2	3	4	5
（9）	公司主要是聘用具备必要知识和技能的申请人	1	2	3	4	5
（10）	在职培训比正式教育或在其他公司的工作经历重要	1	2	3	4	5
（11）	在决定薪金待遇时，公司会重视外部薪酬水平	1	2	3	4	5
（12）	公司的福利政策是为了促进员工继续在本公司工作	1	2	3	4	5
（13）	在相同职位上根据业绩的高低有较大差距的薪水	1	2	3	4	5
（14）	员工到不同的部门轮岗是公司培训人才的一项活动	1	2	3	4	5
（15）	我们公司有充足的员工培训资金	1	2	3	4	5

2. 就公司的知识交流与组合而言，请圈选合适的数字来表明您在什么程度上同意或不同意下面各项陈述。

		完全 不同意				非常 同意
（1）	员工知道与其他人交流想法及共同商议的好处	1	2	3	4	5
（2）	员工们相信通过交流与结合想法他们能让新项目或新方案比单独工作时向前进展的要快	1	2	3	4	5
（3）	每天工作结束时，员工会觉得他们从交流和结合想法过程中互相学到了东西	1	2	3	4	5
（4）	公司的员工精通于用交流和结合想法去解决问题或创造机会	1	2	3	4	5
（5）	员工不能很好的去分享个人想法来提出新点子，产品或服务	1	2	3	4	5
（6）	员工有能力分享他们的专长使新项目或新方案成功	1	2	3	4	5
（7）	员工愿意与同事交流和结合想法	1	2	3	4	5
（8）	员工们不常交流和结合想法来解决问题	1	2	3	4	5

六. 外部环境

1.就过去三年中需求的不确定性而言，请圈选合适的数字来表明您在什么程度上同意或不同意下面各项陈述。

		强烈不同意				强烈同意
（1）	在这个行业里，顾客总是在寻找新的产品	1	2	3	4	5
（2）	消费者偏好一直以来经常变化	1	2	3	4	5
（3）	在这个行业里，市场需求非常难预测	1	2	3	4	5
（4）	顾客偏好的进化方向很难预测	1	2	3	4	5

2.就过去三年中技术的动荡性而言，请圈选合适的数字来表明您在什么程度上同意或不同意下面各项陈述。

		强烈 不同意				强烈 同意
（1）	在我们这个行业里技术变化的非常快	1	2	3	4	5
（2）	在我们这个行业里技术变化提供了巨大的机会	1	2	3	4	5
（3）	在我们这个行业里，通过技术突破使大量的新产品想法成为可能	1	2	3	4	5

3. 就过去三年中竞争强度而言，请圈选合适的数字来表明您在什么程度上同意或不同意下面各项陈述。

		强烈 不同意				强烈 同意
（1）	在我们这个行业里，有很多'促销战争'	1	2	3	4	5
（2）	其他公司能轻易的抄袭公司新推出的产品	1	2	3	4	5
（3）	价格竞争是这个行业的特点	1	2	3	4	5

4.就过去三年中公司运行环境的动荡性而言，请圈选合适的数字来表明您在什么程度上同意或不同意下面各项陈述。

		强烈不同意				强烈同意
（1）	国内外竞争对手的行为很难预测	1	2	3	4	5
（2）	市场需求和顾客品味很难预测	1	2	3	4	5
（3）	消费者偏好变化很快	1	2	3	4	5
（4）	产品或服务的淘汰率增长很显著	1	2	3	4	5

5.就过去三年中行业增长情况而言，请圈选合适的数字来表明您在什么程度上同意或不同意下面各项陈述。

		强烈不同意				强烈同意
（1）	这个行业有高增长的市场需求	1	2	3	4	5
（2）	这个行业为未来的增长提供了很多诱人的机会	1	2	3	4	5
（3）	增长机会在这个行业里是充足的	1	2	3	4	5

6.请圈选合适的数字来表明以下各项关于过去三年中非公平性竞争的程度。

		非常低				非常高
（1）	不正当竞争措施，诸如非法拷贝新产品等	1	2	3	4	5
（2）	其他公司盗版您公司的产品和商标	1	2	3	4	5
（3）	用失效的市场竞争法律来保护公司的知识产权	1	2	3	4	5
（4）	在同行业中被其他公司增加的不平等竞争行为	1	2	3	4	5

7. 就过去三年中制度保障而言，请圈选合适的数字来表明您在什么程度上同意或不同意下面各项陈述。

		强烈 不同意				强烈 同意
（1）	已执行的政策和项目对公司的运营是有利的	1	2	3	4	5
（2）	提供技术信息和其他技术支持	1	2	3	4	5
（3）	在融资支持上扮演重要的角色	1	2	3	4	5
（4）	提供重要的市场信息	1	2	3	4	5
（5）	帮助公司在进口技术，制造业和原材料以及其他设备时取得许可证	1	2	3	4	5

七.创新绩效

1.贵公司自从建立以来申请过_____项专利技术；获得了_____项专利技术

2.贵公司在中国专利局注册了几项实用新型专利和外观设计？_____

3.贵公司获得了几项国际和国内的质量保证标志？_____

4.在过去三年中，新产品的年成交额占公司总成交额的平均比例是多少？

1	2	3	4	5
<10%	10-15%	15-30%	30-50%	>50%

5.在过去的三年中，当前新推出的产品销售额的平均比例是多少？

1	2	3	4	5
<10%	10-15%	15-30%	30-50%	>50%

6.在过去的三年中，当前改进后的产品销售额的平均比例是多少？

1	2	3	4	5
<10%	10-15%	15-30%	30-50%	>50%

7.在过去三年中，与主要的竞争对手相比，您如何评价以下关于公司新产品的业绩的各项陈述？

		非常弱	比较弱	普通	比较强	非常强
（1）	销售增长额	1	2	3	4	5
（2）	市场份额增长额	1	2	3	4	5
（3）	利润增长额	1	2	3	4	5
（4）	投资回报率	1	2	3	4	5

八.公司绩效

1. 与主要竞争对手相比，请您评价以下各项关于贵公司过去三年的公司业绩的情况。

		非常差	比较差	普通	比较强	非常强
（1）	销售增长额	1	2	3	4	5
（2）	市场份额增长额	1	2	3	4	5
（3）	利润增长额	1	2	3	4	5
（4）	投资回报率（ROI）	1	2	3	4	5
（5）	销售收益率 (ROS)	1	2	3	4	5
（6）	资产收益率 (ROA)	1	2	3	4	5
（7）	税前利润增长率	1	2	3	4	5
（8）	市场运营的现金流	1	2	3	4	5
（9）	获得新知识或技术	1	2	3	4	5
（10）	员工人数的增长额	1	2	3	4	5
（11）	净利润率	1	2	3	4	5
（12）	竞争地位	1	2	3	4	5
（13）	顾客满意度	1	2	3	4	5
（14）	总体经营效率	1	2	3	4	5
（15）	公司的总体声誉	1	2	3	4	5

2.在过去的三年中，请表明您对于公司产品在主要的出口市场的表现的满意程度。

		和竞争对手相比 非常差				和竞争对手相比 非常好
（1）	国际市场上的销售 增长额	1	2	3	4	5
（2）	国际市场上的税前 利润	1	2	3	4	5
（3）	国际市场上的市场 份额	1	2	3	4	5
（4）	国际市场上的投资 回报率	1	2	3	4	5

3. 与竞争对手相比，您会如何评价在过去三年中贵公司的主要产品在出口市场上的成就？

非常不成功				非常成功
1	2	3	4	5

非常谢谢您的协助。如果您愿意和我们进一步探讨问卷中涉及到的议题，尽请联系我们。

（1）您是否感兴趣收到此次研究结果的报告？

　　　　是 【 】　　　否 【 】

（2）如果上述问题您选择了'是'或'愿意'，请您留下您的联系信息：

姓名：＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

通信地址：＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

电子邮件：＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿

References

Adler, N., Campbell, N., and Laurent, A. (1989) 'In search of appropriate methodology: from outside the People's Republic of China looking in'. *Journal of International Business Studies*, 20: 61-74.

Adler, P.S. and Kwon, S. (2000) *Social capital: the good, the bad, and the ugly. In E. Lesser (Ed.), Knowledge and social capital: Foundations and applications*, 89-115, Boston, MA: Butterworth-Heinemann.

Adler, P.S. and Kwon, S. (2002) 'Social capital: prospects for a new concept'. *Academy of Management Review*, 27(1): 17-40.

Ahlstrom, D. and Bruton, G.D. (2002) 'An institutional perspective on the role of culture in shaping strategic actions by technology-focused entrepreneurial firms in China'. *Entrepreneurship Theory and Practice*, 26(4): 53-69.

Ahlstrom, D., Bruton, G.D., and Yeh, K.S. (2007) 'Venture capital in China: past, present, and future'. *Asia Pacific Journal of Management*, 24: 247-268.

Ahuja, G. (2000) 'Collaboration networks, structural holes, and innovation: a longitudinal study'. *Administrative Science Quarterly*, 45: 425-455.

Aiken, L.S., and West, S.G. (1991) *Multiple Regression: Testing and Interpreting Interactions*. Newbury Park, CA: Sage.

Almor, T. (2006) 'Conceptualizing paths of growth for technology-based born-global firms originating in a small-population advanced economy'. *International Studies of Management and Organization*, 43(2): 56-78.

Alon, I., Child, J., Li, S., and McIntyre, J.R. (2011) 'Globalization of Chinese firms: theoretical universalism or particularism'. *Management and Organization Review*, 7(2): 191-200.

Anderson, J.C. and Gerbing, D.W. (1988) Structural equation modelling in practice: a review and recommended two-step approach. *Psychological Bulletin*, 103, 411-423.

Anderson, A.R., Li, J., Harrison, R.T., and Robson, P.J.A. (2003). The increasing role of small business in the Chinese economy. *Journal of Small Business Management*, 41(3), 310-316.

Ang, S.H. (2008). Competitive intensity and collaboration: impact on firm growth across technological environments. *Strategic Management Journal*, 29(10), 1057-1075.

Antoncic, B. and Hisrich, R.D. (2000). An integrative conceptual model, in Dana, L.P. (Ed.), Global Marketing Co-operation and Networks, International Business Press, New York, NY, pp17-35.

Aragon-Sanchez, A. and Sanchez-Marin, G. (2005). Strategic orientation, management characteristics, and performance: a study of Spanish SMEs. *Journal of Small Business Management*, 43(3): 287-308.

Atuahene-Gima, K. and Li, H. (2004) 'Strategic decision and comprehensiveness and new product development outcomes in new technology ventures'. *Academy of Management Journal*, 47(4): 583-597.

Atuahene-Gima, K. (1996) 'Market orientation and innovation'. *Journal of Business Research*, 35: 93-103.

Atherton, A. and Smallbone, D. (2010) 'State promotion of SME development at the local level in China: an examination of two cases'. *Journal of Chinese Entrepreneurship*, 2(3): 225-241.

Atuahene-Gima, K. and Ko, A. (2001) 'An empirical investigation of the effect of market orientation and entrepreneurial orientation alignment on product innovation'. *Organization Science*, 12: 54-74.

Atwell, J.D. (2000) *Guiding the innovators: why accountants are valued*. In The silicon Valley Edge, Lee C, Miller WF, Hancock MG, Rowen HS (eds). Stanford University Press: Stanford, CA; 355-369.

Aulakh, P.S., Kotabe, M., and Teegen, H. (2000) 'Export strategies and performance of firms from emerging economies: evidence from Brazil, Chile, and Mexico'. *Academy of Management Journal*, 43(3): 42-361.

Autio, E., Sapienza, H.J., and Almeida, J.G. (2000) 'Effects of age at entry, knowledge intensity, and imitability on international growth'. *Academy of Management Journal*, 43(5): 909-924.

Bagozzi, R.P. and Yi.Y. (1988) 'On the evaluation of structural equation models'. *Journal of the Academy of Marketing Science*, 14(1): 33-46.

Bahrami, H. and Evans, S. (1995) 'Flexible re-cycling and high-technology entrepreneurship'. *California Management Review*, 37: 62-89.

Bain, J.S. (1956) *Barriers to new competition*. Cambridge: Harvard University Press.

Bain, J.S. (1959) *Industrial Organization*. New York: Wiley.

Baker, W.E. and Sinkula, J.M. (1999) 'The synergistic effect of market orientation and learning orientation on organizational performance'. *Journal of the Academy of Marketing Science*, 27(4): 411-427.

Baker, W.E. and Sinkula, J.M. (2009) 'The complementary effects of market orientation and entrepreneurial orientation on profitability in small businesses'. *Journal of Small Business Management*, 17(1): 99-120.

Barney, J. (1991) 'Firm resources and sustained competitive advantage'. *Journal of Management*, 17(1): 99-120.

Barney, J., Wright, M. and Ketchen, D.J. (2001) 'The resource-based view of the firm: ten years after 1991'. *Journal of Management*, 27: 625-641.

Baumol, W.J., Panzer, J.C., and Willig, R.D. (1982) *Contestable Markets and the Theory of Industrial Structure*. New York, NY: Harcourt Brace Jovanovitch.

Batjargal, B. (2003) 'Social capital and entrepreneurial performance in Russia: a longitudinal study'. *Organization Studies*, 24(4): 535-556.

Batjargal, B. (2007) 'Comparative social capital: networks of entrepreneurs and venture capitalists in China and Russia'. *Management and Organization Review*, 3(3): 397-419.

Belderbos, R., Carree, M., Lokshin, B. (2004) 'Cooperative R&D and firm performance'. *Research Policy*, 33(10): 1477-1492.

Beleska-Spasova, E., Glaister, K.W., and Stride, C. (2012) 'Resource determinants of strategy and performance: the case of British exporters'. *Journal of World Business*, 47: 635-647.

Bentler, P.M. and Bonnett, D.G. (1980) 'Significant tests and goodness of fit in the analysis of covariance structure'. *Psychological Bulletin*, 88(3): 588-606.

Bloodgood, J.M., Sapienza, H.J., and Almeida, J.G. (1996) 'The internationalization of new high potential U.S. ventures: antecedents and outcomes'. *Entrepreneurship Theory and Practices*, 20(4): 61-76.

Bollen, K.A. (1989) *Structural equations with latent variables*. New York: Wiley.

Boter, H. and Holmquist, C. (1996) 'Industry characteristics and internationalisation processes in small firms'. *Journal of Business Venturing*, 11(6): 471-487.

Brisling, R. (1970) 'Back translation for cross-cultural research'. *Journal of Applied Psychology*, 1: 185-216.

Bromiley, P. and Fleming, L. (2002) *The resource-based of strategy: a behaviourist critique*. In M. Augier and J.G. March (eds) The economics of choice, change and organization. Essays in memory of Richard M. Cyert (pp. 319-336). Cheltenham, Northampton, MA: Edward Elgar.

Brown, S.L. and Eisenhardt, K.M. (1998) *Competing on the edge: strategy as structured chaos*. Boston, MA: Harvard Business School Press.

Browne, M.W. and Cudeck, R. (1993) *Alternative ways of assessing model fit*. In: Bollen, K.A., Long, J.S. (Eds.), Testing structural Equation Models. Sage Publications: Newbury Park, pp.136-162.

Brouthers, K.D. (2013) 'Institutional, cultural and transaction cost influences on entry mode choice and performance'. *Journal of International Business Studies*, 44: 1-13.

Brouthers, K.D and Hennart, J.F. (2007) 'Boundaries of the firm: insights from international entry mode research'. *Journal of Management*, 33: 395-425.

Brouthers, L.E. and Xu, K. (2002) 'Product stereotypes, strategy and performance satisfaction: the case of Chinese exporters'. *Journal of International Business Studies*, 33(4): 657-677.

Brush, C.G., Edelman, L.F., and Manolova, T.S. (2002) 'The impact of resources on small firm internationalisation'. *Journal of Small Business Strategy*, 13(1): 1-17.

Bruton, G.D. and Rubanik, Y. (2002) 'Resource of the firm, Russian high-technology start-ups, and firm growth'. *Journal of Business Venturing*, 17(6):553-576.

Bryman, A. and Cramer, D. (1997) *Quantitative Data Analysis*. London: Routledge.

Bryman, A. and Bell, E. (2007) *Business Research Methods* (2nd edition). New York: Oxford University Press Inc.

Buckley, P., Clegg, J., and Wang, C. (2002) 'The impact of inward FDI on the performance of Chinese manufacturing firms'. *Journal of International Business Studies*, 33(4): 637-655.

Buckley, P.J., Clegg, L.J., Cross, A.R., Liu, X., Voss, H., and Zheng, P. (2007) 'The determinants of Chinese outward foreign direct investment'. *Journal of International Business Studies*, 38: 499-518.

Buckley, P.J., Cross, A.R., Tan, H., Xin, L., and Voss, H. (2008) 'Historic and emergent trends in Chinese outward direct investment'. *Management International Review*, 48(6): 715-748.

Buckley, P.J. and Chapman, M. (1998) 'The use of 'native categories' in management research'. *British Journal of Management*, 8(4): 283-299.

Buergel, O., Fier, A., Licht, G., and Murray, G. (2002) The effect of internationalisation on the rate of growth of high-tech start-ups: evidence for the UK and Germany. In Schatzl, L., J.R.

Diez (Eds.), Technological Change and Regional Development in Europe. Physica, Heidelberg, pp.74-89.

Burrell, G., and Morgan, G. (1979) *Sociological Paradigms and Organizational Analysis*. London: Heinemann.

Burt, R.S. (1992) *Structure holes: the social structure of competition*. Cambridge, MA: Harvard University Press.

Burt, R.S. (1997) 'The contingent value of social capital'. *Administrative Science Quarterly*, 35(1): 128-152.

Caloghiour, Y., Protegerou, A., Spanos, Y., and Papagiannakis, L. (2004) 'Industry-versus-firm-specific effects on performance: contrasting SMEs and large-sized firms'. *European Management Journal*, 22(2): 231-243.

Campbell, D.T. and Fiske, D.W. (1959) 'Convergent and discriminant validation by the multitrait-multimenthod matrix'. *Psychological Bulletin*, 56(2):81-105.

Carlisle, E. and Flynn, D. (2005) 'Small business survival in China: guanxi, legitimacy, and social capital'. *Journal of Development Entrepreneurship*, 10(1): 79-96.

Castanias, R.P. and Helfat, C. (1992) 'Managerial and windfall rents in the market for corporate control'. *Journal of Economic Behaviour and Organisation*, 18(2): 153-184.

Caves, R.E. (1971) 'International corporations: the industrial economics of foreign investment'. *Economica*, New Series, 38(149): 1-27.

Chamberlain, E.H. (1933) *The theory of monopolistic competition*. Cambridge, MA: Harvard University Press.

Chandler, G.N. and Hanks, S.H. (1993) Measuring the performance of emerging businesses: a validation study. *Journal of Business Venturing*, 8(5): 391-408.

Chandy, R.K. and Tellis, G.J. (2000) 'The incumbent's curse? Incumbency, size and radical product innovation'. *Journal of Marketing*, 64(3): 1-18.

Chen, H. and Chen, T.J. (1998) 'Network linkages and location choice in foreign direct investment'. *Journal of International Business Studies*, 29(3): 445-467.

Chen, J. (2006) 'Development of Chinese small and medium-sized enterprises'. *Journal of Small Business and Enterprises Development*, 13(2): 140-147.

Chen, W. (2007) 'Does the colour of the cat matter? The red hat strategy in China's private enterprises'. *Management and Organization Review*, 3(1): 55-80.

Child, J. (1972) 'Organizational structure, environment, and performance: the role of strategic choice'. *Sociology*, 6: 1-22.

Child, J. (1994). *Management in China during the Age of Reform*. Cambridge University Press: Cambridge, U.K.

Child, J. and Rodrigues, S.B. (2005) 'The internationalization of Chinese firms: a case for theoretical extension?' *Management and Organization Review*, 1(3): 381-410.

Child, J. and Tse, D.K. (2001) 'China's transition and its implications for international business'. *Journal of International Business Studies*, 32(1): 5-21.

Chisholm, A.M. and Nielsen, K. (2009) 'Social capital and the resource-based view of the firm'. *International Studies of Management and Organization*, 39(2): 7-32.

Choi, C.J., Lee, S.H., and Kim, J.B. (1999) 'A note on countertrade: contractual uncertainty and transaction governance in emerging economies'. *Journal of International Business Studies*, 30(1):189-201.

Choi, S.B., Lee, S.H., and Williams, C. (2011) 'Ownership and firm innovation in a transition economy: evidence from China'. *Research Policy*, 40:441-452

Chung, S. and Kim, G.M. (2003) 'Performance effects of partnership between manufacturers and suppliers for new product development: the supplier's standpoint'. *Research Policy*, 32(4): 587-603.

Chung, H.F.L. (2011) 'Market orientation, guanxi, and business performance'. *Industrial Marketing Management*, 40: 522-533.

Churchill, G.A. (1987) *Marketing Research: Methodological Foundation* (4th edition), London: Dryden Press.

Cohen, J. and Cohen, P. (1983) *Applied multiple regression/ correlation analysis for the behavioural sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.

Collis, D.J. (1994) 'Research note: how valuable are organisational capabilities?' *Strategic Management Journal*, 15: 143-152.

Collis, J. and Hussey, R. (2003) *Business Research: A Practical Guide for Undergraduate and Postgraduate Students* (2nd edition), Basingstoke, Palgrave Macmillan.

Coleman, J.C. (1988) 'Social capital in the creation of human capital'. *American Journal of Sociology*, 94(Supplement): 95-120.

Comte, A. (1853) *The positivist philosophy*. London: Chapman.

Conner, K.R. (1991) 'A historical comparison of resource-based theory and five schools of thought within industrial organisation economics: do we have a new theory of the firm?' *Journal of Management*, 17(1): 121-154.

Cooper, D.R. and Emory, C.W. (1995) *Business Research Methods*. (5th edition). Chicago: Richard D. Irwin.

Coviello, N.E. and Cox, M.P. (2006) 'The resource dynamics of international new venture networks'. *Journal of International Entrepreneurship*, 4(2-3): 113-132.

Covin, J.G. and Slevin, D.P. (1989) 'Strategic management of small firms in hostile and benign environments'. *Strategic Management Journal*, 10(1): 75-87.

Covin, J.G. and Slevin, D.P. (1991) 'A conceptual model of entrepreneurship as firm behaviour'. *Entrepreneurship Theory and Practice*, 16: 7-25.

Cragg, P.B. (1991) *Designing and using mail questionnaires*, in Smith, N.C. and Dainty, P. (eds.) The Management Research Handbook, London: Routledge.

Creswell, J.W. (1994) *Research Design: Qualitative & Quantitative approaches*. Thousand Oaks, CA: Sage.

Creswell, J.W. (2003) *Research Design: Quantitative, Qualitative and Mixed Methods Approaches*. Thousand Oaks, USA: Sage.

Cronbach, L.J. (1951) 'Coefficient alpha and the internal structure of tests'. *Psychometrika*, 16: 297-334.

Crossley, M. and Vulliamy, G. (1997) *Qualitative Educational Research in Developing Countries: Current Perspectives*. New York, Garland.

Cumbers, A., Mackinnon, D., Chapman, K. (2003) 'Innovation, collaboration, and learning in regional clusters: a study of SMEs in the Aberdeen oil complex'. *Environment and Planning A*, 35(9): 1689-1706.

Dacin, M., Tina, C.O., and Roy, J. (2007) 'The legitimacy of strategic alliances: an institutional perspective'. *Strategic Management Journal*, 28(2): 169-187.

Daft, R.L. and Weick, K.E. (1984) 'Toward a model of organisations as interpretation systems'. *Academy of Management Review*, 9: 284-295.

Dai, O. and Liu, X. (2009) 'Returnee entrepreneurs and firm performance in Chinese high-technology industries'. *International Business Review*, 18(4): 373-386.

Dana, L.P. (1999) 'Small business as a supplement in the People's Republic of China (PRC)'. *Journal of Small Business Management*, 37(3): 76-80.

Das, T.K. and Teng, B. (2000) 'A resource-based theory of strategic alliances'. *Journal of Management*, 26(1): 31-61.

Datta, D.K., Guthrie, J.P., Wright, P.M. (2005) 'Human resource management and labour productivity: does industry matter?' *Academy of Management Journal*, 48: 135-145.

Davidsson, P. and Honig, B. (2003) 'The role social and human capital among nascent entrepreneurs'. *Journal of Business Venturing*, 18(3): 301-331.

Davis, H., Leung, T.K., Luk, S., and Wong, Y. (1995) 'The benefits of Guanxi: the value of relationships in developing the Chinese market'. *Industrial Marketing Management*, 24: 207-214.

Data, D.K., Guthrie, J.P., and Wright, P.M. (2005) 'Human resource management and labour productivity: does industry matter?' *Academy of Management Journal*, 48: 135-145.

Day, G. (1990) *Market Driven Strategy: Process for Creating Value*. New York: The Free Press.

Day, G. and Wensley, R. (1988) 'Assessing advantage: a framework for diagnosing competitive superiority'. *Journal of Marketing*, 52(2): 1-20.

De Chernatony, L. (1990) 'Exhuming the low response rate fallacy of postal research'. *Marketing Intelligence and Planning*, 8(1): 34-39.

De Luca, L.M. and Atuahene-Gima, K. (2007) 'Market knowledge dimensions and cross-functional collaboration: examining the different routes to product innovation performance'. *Journal of Marketing*, 71(1): 95-112.

Demsetz, H. (1973) 'Industry structure, Market rivalry, and public policy'. *Journal of Law and Economics*, 16(1): 1-9.

Deng, P. (2012) 'The internationalisation of Chinese firms: a critical review and future research'. *International Journal of Management Reviews*, 14(4): 408-427.

Deng, Z., Hofman, P.S., and Newman, A. (2013) 'Ownership concentration and product innovation in Chinese private SMEs'. *Asia Pacific Journal of Management*, 30: 717-734.

Denzin, N. and Lincoln, Y.S. (2000) *Handbook of qualitative research*. Thousand Oaks: Sage.

Denzin, N. and Lincoln, Y.S. (2005) *The Sage handbook of qualitative research* (3rd edition). Thousand Oaks: Sage.

Deshpande, R. (1982) 'The organizational context of market research use', *Journal of Marketing*, 46(3): 91-101.

Deshpande, R. and Farley, J. (1998) 'Measuring market orientation: generalisation and synthesis'. *Journal of Market Focused Management*, 2: 213-232.

Deshpande, R., Farley, J., and Webster, F.E. (1993) 'Corporate culture, customer orientation, and innovativeness in Japanese Firms: a quadrad analysis'. *Journal of Marketing*, 57(1): 23-37.

Dess, G.G. and Robinson, R.B. (1984) 'Measuring organizational performance in the absence of objective measures'. *Strategic Management Journal*, 5(3): 265-273.

Dess, G.G., Lumpkin, G.T., and Covin, J.G. (1997) 'Entrepreneurial strategy making and firm performance: tests of contingency and configurational models'. *Strategic Management Journal*, 18(9): 677-695.

Diamantopoulos, A. and Schlegelmilch, B.B. (1996) 'Determinants of industrial mail survey response: a survey-on-surveys analysis of researchers' and managers' views'. *Journal of Marketing Management*, 12: 505-531.

Diez, J.D. (2000) 'Innovative networks in manufacturing: some empirical evidence from the metropolitan area of Barcelona'. *Technovation*, 20(3): 139-150.

Dillman, D.A. (1978) *Mail and Telephone Surveys: Total Design Method*. New York: John Wiley.

DiMaggio, P. and Powell, W.W. (1991). Introduction. In W.W. Powell and P.J. DiMaggio (Eds.) The New Institutionalism in Organizational Analysis: 1-38 Chicago: University of Chicago Press.

DiMaggio, P. and Powell, W.W. (1983) 'The iron cage revisited: institutional isomorphism and collective rationality in organizational fields'. *American Sociological Review*, 48: 147-160.

Doloreux, D. (2004) 'Regional networks of small and medium sized enterprises: evidence from the metropolitan area of Ottawa in Canada'. *European Planning Studies*, 12(2): 173-189.

Dong, L. and Glaister, K.W. (2006) 'Motives and partner selection criteria in international strategic alliances: perspectives of Chinese firms'. *International Business Review*, 15: 577-600.

Downey, H.K., Hellriegel, D., and Jr Slcum, J.W. (1975) Environmental uncertainty: the construct and its application. *Administrative Science Qurterly*, 20(4): 613-629.

Dunning, J.H. (1993) *Multinational Enterprises and the Global Economy*. New York: Addisondash Wesley.

Dunning, J.H. and Lundan, S.M. (2008) 'Institutions and the OLI paradigm of the multinational enterprise'. *Asia Pacific Journal of Management*, 25: 573-593.

Dyer, J.H. (1997). 'Effective inter-firm collaboration: how firms minimize transaction costs and maximize transaction value'. *Strategic Management Journal*, 18(7): 535-556.

Easterby-Smith, M., Thorpe, R., and Lowe, A. (1991) *Management Research: An Introduction*. London: Sage.

Easterby-Smith, M., Thorpe, R., and Lowe, A. (2002) *Management Research: An Introduction* (2nd edition), London: Sage.

Eden, L. (2008) 'Letter from the Edit-in-Chief'. *Journal of International Business Studies*, 39(1): 1-7.

Eisenhardt, K. M., & Martin, J. A. (2000) 'Dynamic capabilities: What are they?' *Strategic Management Journal*, 21: 1105-1121.

Eisenhardt, K.M. and Schoonhoven, C.B. (1990) 'Organizational growth: linking founding team, strategy, environment, and growth among U.S. semiconductor ventures, 1978-1988'. *Administrative Science Quarterly*, 35(3): 504-529.

Eisenhardt, K.M. and Schoonhoven, C.B. (1996) 'Resource-based view of strategic alliance formation: strategic and social effects in entrepreneurial firms'. *Organization Science*, 7(2): 136-156.

Eisenhardt, K. (1989) 'Making fast strategic decisions in high velocity environments'. *Academy of Management Journal*, 32: 543-576.

Emory, C.W. (1980) *Business Research Methods*. Homewood, IL: Richard D. Irwin.

Faccio, M. (2006) 'Politically connected firms'. *American Economic Review*, 96 (1): 369-386.

Faems, D., Looy, B.V, and Debackere, K. (2005) 'Interorganizational collaboration and innovation: toward a portfolio approach'. *Journal of Product Innovation Management*, 22(3): 238-250.

Fang, E. (2011) 'The effects of strategic alliance knowledge complementarity on new product innovativeness in China'. *Organization Science*, 22(1): 158-172.

Faria, A.J., Dickinson, J.R. and Filipic, T.J. (1990) 'The effect of telephone versus letter prenotification on mail survey response rate, speed, quality and cost'. *Journal of the Market Research Society*, 32(4): 51-568.

Fernandez, Z. and Nieto, M.J. (2006) 'Impact of ownership on the international involvement of SMEs'. *Journal of International Business Studies*, 37(3): 340-351.

Field, A. (2013) *Discovering Statistics Using IBM SPSS Statistics*. (4th edition). London: Sage Publications Inc.

Filatotchev, I., Dyomina, N., Wright, M., and Buck, T. (2001) 'Effects of post-privatization governance and strategies on export intensity in the former Soviet Union'. *Journal of International Business Studies*, 32(4): 853-871.

Filatotchev, I., Liu, X., Buck, T., and Wright, M. (2009) 'The export orientation and export performance of high-technology SMEs in emerging markets: the effects of knowledge transfer by returnee entrepreneurs'. *Journal of International Business Studies*, 40(6): 1005-1021.

Filatotchev, I., Liu, X., Lu, J., and Wright, M. (2011) 'Knowledge spillovers through human mobility across national borders: evidence from Zhongguancun Science Park in China'. *Research Policy*, 40(3): 453-462.

Fioritto, S.S. and LaForge, R.W. (1986) 'A marketing strategy analysis of small retailers'. *American Journal of Small Business*, 10(4): 7-17.

Foddy, W. (1993) *Constructing questions for interviews and questionnaires: theory and practice in social research*. Cambridge, UK: Cambridge Univeristy.

Fornell, C. and Larcker, D. (1981) 'Evaluating structural equation models with unobservable variables and measurement error'. *Journal of Marketing Research*, 18(1): 39-50.

Foss, N.J. and Robertson, P.L. (2000) *Equilibrium and evolution the conflicting legacies of Demsetz and Penrose*. In N. J. Foss and L. Paul (eds.) Resource, technology, and strategy (pp.11-30). London: Routledge.

Fowler, F.J. (1993). *Survey Research Method*. (2nd edition). Beverly Hills, Sage Publications Foddy, W. (1994). Constructing Questions for interviewing and Questionnaires: Theory and Practice in Social Research, Cambridge: Cambridge University Press.

Gaito, J. (1980) 'Measurement scales and statistics: Resurgence of an old misconception'. *Psychological Bulletin*, 87: 564-567.

Gallego, J., Rubalcaba, L., and Hipp, C. (2012) 'Orgnizational innovation in small European firms: a multidimensional approach'. *International Small Business Journal*, 31(5): 563-579.

Galunic, D.C. and Rodan, S. (1998) 'Resource recombination in the firm: knowledge structures and the potential for Schumpeterian innovation'. *Strategic Management Journal*, 19(12): 1193-1201.

Ganesan, S. (1994) 'Determinants of long-term orientation in buyer-seller relationships'. *Journal of Marketing*, 58: 1-19.

Gao, G.Y., Murray, J.Y., Kotabe, M., and Lu, J. (2010) 'A "strategy tripod" perspective on export behaviours: Evidence from domestic and foreign firms based in an emerging economy'. *Journal of International Business Studies*, 41(3): 377-396.

Gao, L., Liu, X., and Zou, H. (2013) 'The role of human mobility in promoting Chinese outward FDI: a neglected factor?' *International Business Review*, 22(2): 437-449.

Gao, S., Xu, K., and Yang, J. (2008) 'Managerial ties, absorptive capacity, and innovation'. *Asia Pacific Journal of Management*, 25(3): 395-412.

Gao, G.Y., Zhou, K.Z., and Yim, C.K. (2007) 'On what should firms focus in transitional economies? A study of the contingent value of strategic orientations in China'. *International Journal of Research in Marketing*, 24(1): 3-15.

Gartner, W.B. (1985) 'Competitive strategy by Michael E. Porter; Competitive advantage by Michael E. Porter'. *The Academy of Management Review*, 10(4): 873-875.

Gatignon, H. and Xuereb, J. (1997) 'Strategic orientation of the firm and new product performance'. *Journal of Marketing Research*, 34(1): 77-90.

Gedajlovic, E., Cao, Q., and Zhang, H. (2012) 'Corporate shareholdings and organizational ambidexterity in high-tech SMEs: evidence from a transitional economy'. *Journal of Business Venturing*, 27: 652-665.

Geringer, J.M. (1991) *Strategic Alliance Partner Selection: Strategies for Developed Countries*. Westport, Conn.: Quorum Books.

Ghauri, P. and Gronhaug, K. (2005) *Research methods in business studies: a practical guide*. London: Pearson Education.

Gill, J. and Johnson, P. (1997) *Research Methods for Managers* (2nd edn), London: Paul Chapman Publishing.

Gill, J. and Johnson, P. (2002) *Research Methods for Managers* (3rd edn), London: Sage Publication.

Glaister, K.W. (1996) *Theoretical perspectives on strategic alliance formation*, In Peter E. Earl (eds.), Management, Marketing, and the Competitive Process, pp.78-111, Cheltenham: Edward Elgar.

Goulding, C. (2002) *Ground theory: a practical guide for management, business and market researchers*. London: Sage.

Granovetter, M.S. (1985) 'Economic action and social structure: the problem of social embeddedness'. *American Journal of Sociology*, 91(3): 481-510.

Grant, R.M. (1991) 'The resource-based theory of competitive advantage: implications for strategy formulation'. *California Management Review*, 33: 119-135.

Gu, S., Lundvall, B., Liu, J., Malerba, F., and Serger, S.S. (2009) 'China's system and vision of innovation: an analysis in relation to the strategic adjustment and the medium- and long-term S&T development plan (2006-20)'. *Industry and Innovation*, 16(4-5): 369-388

Guba, E. and Lincoln, Y. (1994) Competing paradigms in qualitative methods. In N.K. Denzin and Y.S. Lincoln (eds.) Handbook of qualitative research, (pp105-117). Thousand Oaks: Sage.

Guan, J.C., Yam, R.C.M., Tang, E.P.Y., and Lau, A.K.W. (2009) 'Innovation strategy and performance during economic transition: evidence in Beijing, China'. *Research Policy*, 38: 802-812.

Guillen, M.F. (2003) 'Experience, imitation, and the sequence of foreign entry: wholly owned and joint-venture manufacturing by South Korean firms and business groups in China, 1987-1995'. *Journal of International Business Studies*, 34(2): 185-198.

Gulati, R. (1998) 'Alliances and networks'. *Strategic Management Journal*, 19(4): 293-317.

Gulati, R. (2007) *Managing network resources: alliances, affiliation, and other relational assets*. New York: Oxford University Press.

Guo, K. (1997) The transformation of China's economic growth pattern – conditions and methods. *Social Science in China*, 18(3): 12-20.

Hair, J.F. JR., Anderson, R.E., Tatham, R.L., and Black, W.C. (1998) Multivariate Data Analysis, Fifth Edition, Prentice Hall International, Inc.

Hair, J.F., Black, W.C., Babin, B.J., and Anderson, R.E. (2006) Multivariate Data Analysis. Unpper Saddle River, NJ: Pearson Education International.

Hambrick, D.C. and Finkelstein, S. (1987) Managerial discretion: a bridge between polar views of organizations. In Research in Organizational Behaviour (vol. 9), Cummings, LL. And Staw, BM (eds.). JAI Press: Greenwich, CT; 369-406.

Hamel, G. (2000) Leading the Revolution. Harvard University Press, Cambridge, MA.

Hamel, G., Doz, Y.L., and Prahalad, C.K. (1989) 'Collaborate with your competitors and win'. *Harvard Business Review*, (January - February), 133-139.

Hammersley, M. and Atkinson, P. (1995) *Ethnography: principles in practice*. New York: Routledge.

Harzing, A. (1997) 'Response rates in international mail surveys: Results of a 22-country study'. *International Business Review*, 6(6): 641-665.

Hillman, A.J., Zardkoohi, A., Bierman, L. (1999) 'Corporate political strategies and firm performance: indications of firm-specific benefits from personal service in the U.S. government'. *Strategic Management Journal*, 20(1):67-81.

Hirschheim, R.A. (1985). Information systems epistemology: a historical perspective. In E. Mumford, R. Hirschheim, G. Fitzgerald and A.T. Wood-Harper (eds.) Research methods in information systems (pp.13-35). New York NY: North-Holland.

Hitt, M.A., Dacin, M.T., Levitas, E., Arregle, J.L., and Borza, A. (2000) 'Partner selection in emerging and developed market contexts: resource-based and organizational learning perspectives'. *Academy of Management Journal*, 43(3): 449-467.

Hitt, M.A., Ireland, R.D., Camp, S.M., and Sexton, D.L. (2001) 'Strategic entrepreneurship: entrepreneurial strategies for wealth creation'. *Strategic Management Journal*, 22(6-7):479-491.

Hitt, M.A., Uhlenbruck, K., and Shimizu, K. (2006) 'The importance of resources in the internationalisation of professional service firms: the good, the bad, and the ugly'. *Academy of Management Journal*, 49(6): 1137-1157.

Hitt, M.A., Keats, B.W., and DeMarie, S.M. (1998) 'Navigating in the new competitive landscape: building strategic flexibility and competitive advantage in the 21st century'. *The Academy of Management Executive* (1993-2005), 12(4): 22-42.

Ho, S. (2001) Growing consumer power in China: some lessons for managers. *Journal of International Marketing*, 9(1): 64-83.

Hoskisson, R.E., Eden, L., Lau, C.M., and Wright, M. (2000) 'Strategy in emerging economies'. *Academy of Management Journal*, 43(3): 249-267.

Howells, J. (2006) 'Intermediation and the role of intermediaries in innovation'. *Research Policy*, 35:715-728.

Hu, L.T. and Bentler, P.M. (1999) 'Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives'. *Structural Equation Modelling*, 6(1): 1-55.

Huang, C., Amorim, C., Spinoglio, M., Gouveia, B., and Medina, A. (2004) 'Organization, programmeme, and structure: an analysis of the Chinese innovation policy framework'. *R&D Management*, 34(4): 367-387.

Hult, G.T.M., Ketchen, D.J., Jr. Griffith, D.A. Chabowski, B.R., Hamman, M.K., Dykes, B.J., Pollite, W.A., and Cavusgil, S.T. (2008) An assessment of the measurement of performance in international business research. *Journal of International Business Studies*, 39(6): 1064-1080.

Hussain, J., Millman, C., and Matlay, H. (2006) 'SME financing in the UK and in China: a comparative perspective'. *Journal of Small Business and Enterprise Development*, 13(4): 584-599.

Hutschenreiter, G. and Zhang, G. (2007) 'China's quest for innovation-driven growth – the policy dimension'. *Journal of Industry, Competition and Trade*, 7(3-4): 245-254.

Ingram, P. and Silverman, B. (2002) Introduction. In P. Ingram and B. Silverman (eds), The New Institutionalism in Strategic Management, 1-30. Amsterdam: Elsevier.

Inkpen, A.C. and Tsang, E.W.K. (2005) 'Social capital, networks, and knowledge transfer'. *The Academy of Management Review*, 30(1): 146-165.

Inkpen, A.C. and Pien, W. (2006) 'An examination of collaboration and knowledge transfer: China-Singapore Suzhou industrial park'. *Journal of Management Studies*, 43(4): 779-811.

Jaccard, J., Turrisi, R., and Wan, C.K. (1990) *Interaction Effects in Multiple Regression*. Newbury Park, CA: Sage.

Jaworski, B.J. and Kohli, A.K. (1993) 'Market orientation: antecedents and consequences'. *Journal of Marketing*, 57: 53-70.

Jobber, D. and O'Relly, D. (1996) 'Industrial mail surveys: Techniques for inducing response'. *Marketing Intelligence and Planning*, 14(1): 29-34.

Jobber, D., Mirza, H., and Wee, K.H. (1991) 'Incentives and response rates to cross-national business surveys: a logit model analysis'. *Journal of International Business Studies*, 22(4): 711-721.

Johanson, J., and Vahlne, J. (1977) 'The internationalisation process of the firm: a model of knowledge development and increasing foreign market commitments'. *Journal of International Business Studies*, 8(1): 23-32.

Jones, M.V. (2001) 'First steps in internationalisation: concepts and evidence from a sample of small high-technology firms'. *Journal of International Management*, 7(3): 191-210.

Joreskog, K.G. and Sorbom, D. (1993) *Structural equation modelling with SIMPLIS command language*. Chicage, IL: Scientific Software International.

Joreskog, K.G. and Sorbom, D. (1996) *LISREL 8: User's reference guide*. Chicago: Scientific Software International.

Julien, P.A. and Ramangalahy, C. (2003) 'Competitive strategy and performance of exporting SMEs: an empirical investigation of the impact of their export information search and competencies'. *Entrepreneurship Theory and Practice*, 27: 227-245.

Kalsen, T., Silseth, P.R., Benito, G.R.G., Welch, L.S. (2003) 'Knowledge, internationalization of the firm, and inward-outward connections'. *Industrial Marketing Management*, 32(5): 385-396.

Kaplan, B. and Duchon, D. (1988) 'Combining qualitative and quantitative methods in information systems research: a case study'. *MIS Quarterly*, 12: 571-587.

Kaplan, B. and Maxwell, J.A. (1994) Qualitative research methods for evaluating computer information systems. In J.G. Anderson, C.E. Aydin and S.J. Jay (eds) Evaluating heath care information systems: methods and applications (pp. 45-68). Thousand Oaks CA: Sage.

Kara, A., Spillan, J.E., and DeShields Jr, O.W. (2005) 'The effect of a market orientation on business performance: a study of small-sized service retailers using MARKOR scale'. *Journal of Small Business Management*, 43(2): 105-118.

Katila, R. and Shane, S. (2005) 'When does lack of resources make new firms innovative?' *Academy of Management Journal*, 48: 1183-1194.

Keeley, R.H. and Roure, J.B. (1990) 'Management, strategy, and industry structure as influences on the success of new firms: a structural model'. *Management Science*, 36(10): 1256-1267.

Kelloway, E.K. (1998) *In: Using LISREL for structural equation modelling: a researcher's guide*. Thousand Oaks: Sage.

Kenny, D.A. (1979) *Correlation and Causality*. New York: Wiley.

Kenney, M., Breznitz, D., and Murphree, M. (2013) 'Coming back home after the sun rises: returnee entrepreneurs and growth of high tech industries'. *Research Policy*, 42: 391-407.

Kessler, E. and Chakrabatri, A. (1996) 'Innovation speed: a conceptual model of context, antecedents, and outcome'. *Academy of Management Review*, 21(4): 1143-1191.

Kirca, A.H., Jayachandran, S., and Bearden, W.O. (2005) 'Market orientation: a meta-analytic review and assessment of its antecedents and impact on performance'. *Journal of Marketing*, 69(2): 24-41.

Knight, G.A. and Cavusgil, S.T. (2004) 'Innovation, organizational capabilities, and the born-global firm'. *Journal of International Business Studies*, 35(2): 124-141.

Kohli, A.K., and Jaworski, B. J. (1990) 'Market orientation: the construct, research propositions, and managerial implications'. *Journal of marketing*, 54(2): 1-18.

Kohli, A.K., Jaworski, B.J., and Kumar, A. (1993) 'MARKOR: a measure of market orientation'. *Journal of Marketing Research*, 30: 467-477.

Kogut, B. and Zander, U. (1992) 'Knowledge of the firm, combinative capabilities, and the replication of technology'. *Organization Science*, 3: 383-397.

Korhonen, H., Luostarinen, R., and Welch, L. (1996) 'Internationalization of SMEs: inward-outward patterns and government policy '. Management International Review, 36(4): 315-329.

Kostova, T., and Roth, K. (2002) 'Adoption of an organizationl practice by subsidiaries of multinational corporations: institutional and relational effects'. *Academy of Management Journal*, 45(1): 215-233.

Kraatz, M.S. and Zajac, E.J. (2001) 'How organisational resources affect strategic change and performance in turbulent environments: theory and evidence'. *Organization Science*, 12(5): 632-657.

Kumar, K., Subramanian, R., and Yauger, C. (1998) 'Examining the market orientation-performance relationship: a context-specific study'. *Journal of Management*, 24(2): 201-233.

Lau, C.M. and Bruton, G.D. (2010) 'Strategic orientations and strategies of high technology ventures in two transition economies'. *Journal of World Business*, 46(3): 371-380.

Lee, C.K., Lee, K., and Pennings, J.M. (2001) 'Internal capabilities, external networks, and performance: a study on technology-based ventures'. *Strategic Management Journal*, 22(6/7): 615-646.

Lee, H., Kelley, D., Lee, J., and Lee, S. (2012) 'SME survival: the impact of internationalisation, technology resources, and alliances'. *Journal of Small Business Management*, 50(1): 1-19.

Leonard-Barton, D. (1992) 'Core capabilities and core rigidities: a paradox in managing new product development'. *Strategic Management Journal*, 13: 11-125.

Leonidou, L.C., Katsikeas, C.S., Palihawadana, D., and Spyropoulou, S. (2007) 'An analytical review of the factors stimulating smaller firms to export: implications for policy-makers'. *International Marketing Review*, 24(6): 735-770.

Levin, D.M. (1988) *The opening of vision: nihilism and the post-modern situation*. New York: New York University Press.

Li, H. (2001) 'How does new venture strategy matter in the environment-performance relationship?' *Journal of High Technology Management Research*, 12(2): 183-205.

Li, H., and Atuahene-Gima, K. (2001) 'Product innovation strategy and the performance of new technology ventures in China'. *Academy of Management Journal*, 44(6): 1123-1134.

Li, H. and Miller, T. (2006). New ventures in emerging markets: Comprehensive review and future directions. In Haiyang Li (Ed.), Growth of New Technology Ventures in China's Emerging Market, pp. 11-24. Edward Elgar Publishing Ltd., MA: Northampton.

Li, H., Zhang, Y., Li, Y., Zhou, L., and Zhang, W. (2012). Returnees versus locals: who perform better in China's technology entrepreneurship? *Strategic Entrepreneurship Journal*, 6(3): 257-272.

Li, H. and Atuahene-Gima, K. (2002) 'The adoption of agency business activity, product innovation, and performance in Chinese technology ventures'. *Strategic Management Journal*, 23(6): 469-490.

Li, H. and Zhang, Y. (2007) 'The role of managers' political networking and functional experience in new venture performance: evidence from China's transition economy'. *Strategic Management Journal*, 28(8): 791-804.

Li, H., Zhang, Y., and Chan, T. (2005) 'Entrepreneurial strategy making and performance in China's new technology ventures – the contingency effect of environments and firm competences'. *The Journal of High Technology Management Research*, 16(1): 37-57.

Li, H., Zhang, Y., and Lyles, M. (2013) 'Knowledge spillovers, search, and creation in China's emerging market'. *Management and Organization Review*, 9(3): 395-412.

Li, H., Meng, L., Wang, Q., Zhou, L. (2008) 'Political connections, financing and firm performance: evidence from Chinese private firms'. *Journal of Development Economics*, 87(2): 283-299.

Li, J. and Matlay, H. (2006) 'Chinese entrepreneurship and small business development: an overview and research agenda'. *Journal of Small Business and Enterprise Development*, 13(2): 248-262.

Li, J.J. (2005). The formation of managerial networks of foreign firms in China: the effects of strategic orientations. *Asia Pacific Journal of Management*, 22, 423-443.

Li, J.J., Poppo, L., and Zhou, K.Z. (2008). Do managerial ties in China always produce value? Competition, uncertainty, and domestic vs. Foreign firms. *Strategic Management Journal*, 29(4), 383-400.

Li, J.J. and Zhou, K.Z. (2010). How foreign firms achieve competitive advantage in the Chinese emerging economy: managerial ties and market orientation. *Journal of Business Research*, 63, 856-862.

Li, J.J., and Zhou, K.Z., and Shao, A.T. (2009). Competitive position, managerial ties, and profitability of foreign firms in China: an interactive perspective. *Journal of International Business Studies*, 40, 339-352.

Li, Y., Guo, H., Liu, Y., and Li, M. (2008). Incentive mechanisms, entrepreneurial orientation, and technology commercialisation: evidence form China's transitional economy. *Journal of Product Innovation Management*, 25, 63-78.

Li, Y., Liu, Y., and Zhao, Y. (2006). The role of market and entrepreneurship orientation and internal control in the new product development activities of Chinese firms. *Industrial Marketing Management*, 35(3), pp336-347.

Li, Y., Sun, Y.F., and Liu, Y. (2006). An empirical study of SOEs' market orientation in emerging China. *Asia Pacific Journal of Management*, 23(1), 93-113.

Li, Y., Zhao, Y., Tan, J., and Liu, Y. (2008). Moderating effects of entrepreneurial orientation on market orientation-performance linkage: evidence from Chinese small firms. *Journal of Small Business Management*, 46(1), pp113-133.

Liang, X., Lu, X., and Wang, L. (2012). Outward internationalization of private enterprises in China: the effect of competitive advantages and disadvantages compared to home market rivals. *Journal of World Business*, 47(1), pp134-144.

Liebscher, P. (1998). Quantity with quality, teaching quantitative and qualitative methods in library science master's program. *Library Trends*, 46, pp668-680.

Liefner, I., Hennemann, S., Xin, L. (2006). Cooperation in the innovation process in developing countries: empirical evidence from Zhongguancun, Beijing. *Environment and Planning A*, 38(1), 111-130.

Lin, A.C. (1998). Bridging positivist and interpretivist approaches to qualitative methods. *Policy Studies Journal*, 26, pp162-180.

Linn, T.A. (1994). Learning from the competition. *Journal of Accountancy*, 177(2), 43-46.

Lippman, S. and Rumelt, R. (1982). Uncertain imitability: an analysis of interfirm differences in efficiency under competition. *Bell Journal of Economics*, 13, 418-438.

Liu, F., Simon, D.F., Sun, Y., and Cao, C. (2011) China's innovation policies: evolution, institutional structure, and trajectory. *Research Policy*, 40(7): 917-931.

Liu, Q. (2005). Corporate governance in China: current practices, economic effects and institutional determinants. Hong Kong Institute of Economics and Business Strategy Working Paper HIEBS/1125, Hong Kong University.

Liu, X. and Buck, T. (2007). Innovation performance and channels for international technology spillovers: evidence from Chinese high-tech industries. *Research Policy*, 36(3), pp.355-366.

Liu, X., Lu, J., Filatotchev, I., Buck, T., and Wright M. (2010). Returnee entrepreneurs, knowledge spillovers and innovation in high-tech firms in emerging economies. *Journal of International Business Studies*, 41(7), pp.1183-1197.

Liu, X., Lu, J., and Chizema, A. (2014). Top executive compensation, regional institutions and Chinese OFDI. *Journal of World Business*, 49(1): 143.

Liu, X, Wright, M., Filatotchev, I., Dai, O., and Lu, J. (2010). Human mobility and international knowledge spillovers: evidence from high-tech small and medium enterprises in an emerging market. *Strategic Entrepreneurship Journal*, 4(4), pp.340-355.

Liu, X., Xiao, W., and Huang, X. (2008). Bounded entrepreneurship and internationalisation of indigenous Chinese private-owned firms. *International Business Review*, 17, pp488-508.

Liu, Y. (2011). High-tech ventures' innovation and influences of institutional voids: a comparative study of two high-tech parks in China. *Journal of Chinese Entrepreneurship*, 3(2), pp112-133.

Locket, A., Thompson, S., and Morgenstern, U. (2009). The development of the resource-based view of the firm: A critical appraisal. *International Journal of Management Reviews*, 11(1), pp9-28.

Lonial, S.C. and Carter, R.E. (2013). The impact of organisational orientations on medium and small firm performance: a resource-based perspective. *Journal of Small Business Management*, doi:10.1111/jsbm.12054.

Lu, J., Liu, X., and Wong, H. (2011). Motives for outward FDI of Chinese private firms: firm resources, industry dynamics, and government policies. *Management and Organisation Review*, 7(2), pp223-248.

Lu, J.W. and Beamish, P.W. (2001). The internationalization and performance of SMEs. *Strategic Management Journal*, 22(6), pp565-586.

Lu, Q. (2000). China's leap into the Information Age: Innovation and Organization in the Computer Industry. Oxford University Press: Oxford, U.K.

Lu, Y., Zhou, L., Bruton, G., and Li, W. (2010). Capabilities as a mediator linking resources and the international performance of entrepreneurial firms in an emerging economy. *Journal of International Business Studies*, 41, pp.419-436.

Luk, L.C., Yau, H.M., Sin, Y.M., Tse, C.B., Chow, P.M., and Lee, S.Y. (2008). The effects of social capital and organizational innovativeness in different institutional contexts. *Journal of International Business Studies*, 39(4), 589-612.

Lumpkin, G.T. and Dess, G.G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review*, 21(1), pp135-172.

Luo, X., Hsu, M.K., and Liu, S.S. (2008). The moderating role of institutional networking in the customer orientation-trust/commitment-performance causal chain in China. *Journal of the Academy of Marketing Science*, 36(2), pp202-214.

Luo, Y. (1999). Environment-strategy-performance relations in small businesses in China: a case of township and village enterprises in southern China. *Journal of Small Business Management*, 37(1), pp37-52.

Luo, Y. (2003). Industrial dynamics and managerial networking in an emerging market: the case of China. *Strategic Management Journal*, 24(13), pp1315-1327.

Luo, Y. (2007). Are joint venture partners more opportunistic in a more volatile environment? *Strategic Management Journal*, 28(1), pp39-60.

Luo, Y. and Tan, J.J. (1997). How much does industry structure matter on foreign direct investment in China. *International Business Review*, 6(2), pp1-23.

Luo, Y. and Tung, R.L. (2007). International expansion of emerging market enterprises: a springboard perspective. *Journal of International Business Studies*, 38(4), pp481-498.

Luo, Y. and Peng, M.W. (1999). Learning to compete in a transition economy: experience, environment, and performance. *Journal of International Business Studies*, 30, pp269-296.

Luo, Y., Xue, Q., and Han, B. (2010). How emerging market governments promote outward FDI: experience from China. *Journal of World Business*, 45, pp68-79.

Luo, Y., Huang, Y., and Wang, S.L. (2012). Guanxi and organizational performance: a meta-analysis. *Management and Organization Review*, 8(1), pp139-172.

Mahoney, J.T. and Pandian, J.R. (1992). The resource-based view within the conversation of strategic management. *Strategic Management Journal*, 13(5), pp363-380.

Makadok, R. (2001). Toward a synthesis of the resource-based and dynamic capability views of rent creation. *Strategic Management Journal*, 9, 9-28.

Malhotra, N.K. (1996). Marketing Research, 2nd edition, Prentice Hall.

Mason, E. (1949). The current state of the monopoly problem in the U.S. *Harvard Law Review*, 62: 1265-1285.

Mathews, J.A. (2006) 'Dragon multinationals: new players in 21st century globalization'. *Asia Pacific Journal of Management*, 23: 5-27.

Matsuno, K. and Mentzer, J.T. (2000). The effect of strategy type on market orientation performance relationship. *Journal of Marketing*, 64(4), pp1-16.

Matt, M. and Wolff, S. (2004) Incentives, coordination and learning in government-sponsored vs. spontaneous inter-firm research cooperation. *International Journal of Technology Management*, 27(8), pp694-711.

May, T. (1998). Social Research: Issues, Methods and Process (2nd edition). Open University Press, Buckingham, Philadelphia.

Mazzucato, M. (2002). Strategy for business. London: Sage.

McDougall, P.P., Covin, J.G., Robinson, R.B Jr., Herron, L. (1994). The effects of industry growth and strategic breadth on new venture performance and strategy content. *Strategic Management Journal*, 15(7), pp537-554.

McDougall, P.P., Jones, M.V., and Serapio, M.G. (2014) 'High-potential concepts, phenomena, and theories for the advancement of international entrepreneurship research'. *Entrepreneurship Theory and Practice*, 38(1): 1-10.

McEvily, B. and Zaheer, A. (1999). Bridging ties: a source of firm heterogeneity in competitive capabilities. *Strategic Management Journal*, 20(12), 1133-1156.

McGee, J.E., Dowling, M.J., and Megginson, W.L. (1995). Cooperative strategy and new venture performance: the role of business strategy and management experience. *Strategic Management Journal*, 16(7), pp565-580.

Meyer, J.W. and Rowan, B. (1977). Institutionalised organisations: formal structure as myth and ceremony. *American Journal of Sociology*, 83: 340-363.

Meyer, K.E., Estrin, S., Bhaumik, S.K., and Peng, M.W. (2009). Institutions, resources, and entry strategies in emerging economies. *Strategic Management Journal*, 30, pp61-80.

Meyer, K.E. (2006). Asian management research needs more self-confidence. *Asia Pacific Journal of Management*, 23(2), pp119-137.

Meyer, K.E. and Peng, M.W. (2005). Probing theoretically into central and eastern Europe: transactions, resources, and institutions. *Journal of International Business Studies*, 36(6), pp600-621.

Miles, M.B. and Huberman, A.M. (1994). Qualitative data analysis: an expanded sourcebook (2nd edition). Thousand Oaks, CA: Sage.

Miller, A. and Camp, B. (1985) Exploring determinants of success in corporate ventures. *Journal of Business Venturing*, 1(1), 87-105.

Miller, D. and Shamsie, J. 1996. The resource-based view of the firm in two environments: the Hollywood film studios from 1936 to 1965. *Academy of Management Journal*, 39, 519-543.

Miller, D. (1983). The correlates of entrepreneurship in three types of firms. *Management Science*, 24, pp921-933.

Miller, D. and Toulouse, J.M. (1986). Strategy, structure, CEO personality and performance in small firms. *American Journal of Small Business*, 10(3), pp47-62.

Miotti, L., and Sachwald, F. (2003). Co-operative R&D: why, and with whom? An integrated framework of analysis. *Research Policy*, 32(8), 1481-1499.

Mosakowski, E. and McKelvey, B. 1997. Predicting rent generation in competence-based competition. In A. Heene and R. Sanchez (eds.) Competence-based strategic management (pp.65-85). Chichester: Wiley.

Moser, C.A. and Kalton, C. (1971). Survey Methods in Social Investigation, London: Heinemann.

Nahapiet, J. and Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review*, 23(2), 242-266.

Narver, J.D. and Slater, S.F. (1990). The effect of a market orientation on business profitability. *Journal of Marketing*, 5, pp20-35.

Nee, V. (1989). A theory of market transition: from redistribution to markets in state socialism. *American Sociological Review*, 54, 663-681.

Nee, V. (1992). Organizational dynamics of market transition: hybrid forms, property rights, and mixed economy in China. *Administrative Science Quarterly*, 37(1), 1-27.

Nee, V. and Opper, S. (2010). Political capital in a Market Economy. *Social Forces*, 88(5), pp2105-2132.

Neter, J., Wasserman, W. and Kutner, M.H. (1985) Applied Linear Statistical Models: Regression, Analysis of Variance, and Experimental Design, Homewood, IL: Irwin.

Neuman, W.L. (2000) *Social research methods: qualitative and quantitative approaches*. Boston: Allyn and Bacon.

Newber, S.L. (2007). Empirical research on the resource-based view of the firm: an assessment and suggestions for future research. *Strategic Management Journal*, 28, 121-146.

Nieto, M.J. and Santamaria, L. (2007). The importance of diverse collaborative networks for the novelty of product innovation. *Technovation*, 27(6-7), pp367-377.

North, D.C. (1990). Institutions, institutional change, and economic performance. Cambridge, MA: Harvard University Press.

Nunnally, J.C. (1978). Psychometric Theory, 2nd edition, New York: McGraw-Hill.

Oliver, C. (1997). Sustainable competitive advantage: combining institutional and resource-based views. *Strategic Management Journal*, 18(9), 697-713.

Oppenheim, A.N. (1992). Questionnaire Design, Interviewing and Attitude Measurement, New edition, London: Printer Publishers.

Oviatt, B.M. and McDougall, P.P. (1994). Toward a theory of international new ventures. *Journal of International Business Studies*, 25(1), 45-64.

Oviatt, B.M. and McDougall, P.P. (2005). The internationalization of entrepreneurship. Journal of International Business Studies, 36:2-8.

Park, S.H. and Luo, Y. (2001). Guanxi and organizational dynamics: organizational networking in Chinese firms. *Strategic Management Journal*, 22(5), pp455-477.

Pekkarinen, S. and Harmaakorpi, V. (2006). Building regional innovation networks: the definition of an age business core process in a regional innovation system. *Regional Studies*, 40(4), 401-413.

Pelham, A. (2000). Market orientation and other potential influences on performance in small and medium-sized manufacturing firms. *Journal of Small Business Management*, 29, pp48-67.

Penrose, E.T. (1959) The theory of growth of the firm. New York: Wiley.

Peng, M.W. (2001). The resource-based view and international business. *Journal of Management*, 27(6), pp803-829.

Peng, M.W. (2003). Institutional transitions and strategic choices. *Academy of Management Review*, 28(2), 275-296.

Peng, M.W. (2006). Global Strategy. Cincinnati, OH: Thomson South-Western.

Peng, M.W. and Heath, P. (1996). The growth of the firm in planned economics in transition: institutions, organizations, and strategic choice. *Academy of Management Review*, 21(2), 492-528.

Peng, M.W. and Ilinitch, A.Y. (1998). Export intermediary firms: a note on export development research. *Journal of Inernational Business Studies*, 29(3), pp609-620.

Peng, M.W. and Luo, Y. (2000). Managerial ties and firm performance in a transition economy: the nature of a micro-macro link. *The Academy of Management Journal*, 43(3), pp486-501.

Peng, M.W. and Zhou, J.Q. (2005). How network strategies and institutional transitions evolve in Asia. *Asia Pacific Journal of Management*, 22(4), pp321-336.

Peng, M.W., Wang, D.Y.L., and Jiang, Y. (2008). An institution-based view of international business strategy: a focus on emerging economies. *Journal of International Business Studies*, 39(5), pp920-936.

Peng, M.W., Sun, S.L., Pinkham, B. and Chen, H. (2009). The institution-based view as a third leg for a strategy tripod. *The Academy of Management Perspectives*, 23(3), 63-81.

Pennings, J.M., Lee, K., Witteloostuijn, A. (1998). Human capital, social capital, and firm dissolution. *Academy of Management Journal*, 41, pp425-440.

Perkins, D. (1994). Completing China's move to to the market. *Journal of Economic Perspective*, 8(2), pp23-46.

Peteraf, M. (1993). The cornerstones of competitive advantage: a resource-based view. *Strategic Management Journal*, 14, 179-191.

Pfeffer, J. and Salancik, G.R. (1978). The External Control of Organizations. Harper & Row: New York.

Phillips, L.W. (1981). Assessing measurement error in key informant reports: a methodological note on organisational analysis in marketing. *Journal of Marketing Research*, 18:395-415.

Podsakoff, P.M., MacKenzie, S.B., Lee, J-Y, Podsakoff, N.P. (2003). Common method biases in behaviour research: a critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88, 879-903.

Podsakoff, P.M. and Organ, D. (1986). Self-reports in organizational research: problems and prospects. *Journal of Management*, 12, 531-543.

Portes, A. (1998). Social capital: its origins and applications in modern sociology. *Annual Review of Sociology*, 24, pp.1-24.

Porter, M.E. (1980). Competitive strategy: techniques for analysing industries and competitors. New York: Free Press.

Porter, M.E. (1981). The contributions of industrial organisation to strategic management. *Academy of Management Review*, 6, pp609-620.

Porter, M.E. (1985). Competitive strategy: creating and sustaining superior performance. New York: Free Press.

Porter, M.E. (1991). Towards a dynamic theory of strategy. *Strategic Management Journal*, 12, 95-117.

Porter, M.E. (1994). Fundamental issues in strategy: a research agenda. In R.P. Rumelt, D.E. Schendel and D.J.Teece (eds.) Toward a Dynamic Theory of Strategy (pp. 423-462). Boston, MA: Harvard Business School Press.

Powell, W. (1996) 'Inter-organizational collaboration in the biotech industry'. Journal of Institutional and Theoretical Economics, 152: 197-215.

Powell, W. and Brantley, P. (1992) Competititve cooperation in biotech: learning through networks? In Nohria, N., Eccles, R. (Eds.), Networks and Organizations. Harvard Business School Press: Boston, pp. 366-394.

Prahalad, C.K. and Hamel, G. (1990). The core competence of the corporation. *Harvard Business Review*, 68, 79-91.

Priem, R.L. & Butler, J.E. (2001). Is the resource-based 'view' a useful perspective for strategic management research? *Academy of Management Review*, 26, 22-40.

Qin, F. (2007). Transnational mobility, social embeddedness, and new institutions: the return of Chinese engineers from the U.S. Working paper, MIT, Cambridge, MA.

Rao, R.S., Chandy, R.K., and Prabhu, J.C. (2008). The fruits of legitimacy: why some new ventures gain more from innovation than others. *Journal of Marketing*, 72, 58-75.

Rauch, A., Wiklund, J., Lumpkin, G.T., and Frese, M. (2009). Entrepreneurial orientation and business performance: an assessment of past research and suggestions for the future. *Entrepreneurship Theory and Practice*, 33(3), pp761-787.

Reid, S.D. (1981). The decision-maker and export entry and expansion. *Journal of International Business Studies*, 12(3), pp101-112.

Remenyi, D., Williams, B., Money, A. and Swartz, E. (1998). Doing Research in Business and Management: An Introduction to Process and Method, London, Sage.

Reuber, A.R. and Fischer, E. (1997). The influence of the management team's international experience on the internationalisation behaviours of SMEs. *Journal of International Business Studies*, 28(4), pp807-825.

Rindfleisch, A. and Moorman, C. (2001). The acquisition and utilization of information in new product alliances: a strength-of-ties perspective. *Journal of Marketing*, 65, 1-18.

Robson, P.J.A., Akuetteh, C.K., Westhead, P., and Wright, M. (2012) 'Exporting intensity, human capital and business ownership experience' *International Small Business Journal*, 30(4): 367-387.

Robson, C. (2002). Real World Research (2nd edition). Oxford: Blackwell.

Root, F.R. (1994). Entry Strategies for international markets (2nd ed.). Lexington, MA: Lexington Books.

Ruekert, R.W. (1992). Developing a market orientation: an organisational strategy perspective. *International Journal of Research in Marketing*, 9, pp225-245.

Rumelt, R. (1991). How much does industry matter? *Strategic Management Journal*, 12(3), pp167-186.

Ruzzier, M, Hisrich, R.D., and Antoncic, B. (2006). SME internationalization research: past, present, and future. *Journal of Small Business and Enterprise Development*, 13(4), pp476-497.

Sallinen, S. (2001). Social embeddedness of dynamic capabilities: the case of product development of small Finnish software supplier companies. Finland: Oulu University Press.

Saunders, M., Lewis, P., and Thornhill, A. (2002). Research Methods for Business Students. Harlow, U.K.: Prentice Hall.

Saunders, M., Lewis, P., and Thornhill, A. (2007). Research Methods for Business Students (4th edn). Harlow, U.K.: Prentice Hall.

Saxenian, A. (2006). The new Argonauts: Regional advantage in a global economy. Cambridge, MA: Harvard University Press.

Saxenian, A. (1990). Regional networks and the resurgence of Silicon Valley. *California Management Review*, 33(1), pp89-112.

Scherer, F.M., and Ross, D. (1990). Industrial market structure and economic performance. Chicago, IL: Rand McNally.

Schmalensee, R. (1985). Do markets differ much? *The American Economic Review*, 75, pp341-351.

Schumpeter, J.A. 1934. The theory of economic development (7th edition). Cambridge MA: Harvard University Press.

Schweizer, L. (2005) 'Knowledge transfer and R&D in pharmaceutical companies: a case study'. *Journal of Engineering and Technology Management*, 22: 315-331.

Scott, W.R. (1987). The adolescence of institutional theory. *Administrative Science Quarterly*, 32, 493-511.

Scott, W.R. (1995). Institutions and Organisations. Thousand Oaks, CA: Sage.

Semrau, T. and Werner, A. (2014) How exactly do network relationships pay off? The effects of network size and relationship quality on access to start-up resources. *Entrepreneurship Theory and Practice*, 38(3): 501-525.

Shan, W. (1990). An empirical analysis of organizational strategies by entrepreneurial high-technology firms. *Strategic Management Journal*, 11(2), 129-139.

Shane, S. and Cable, D. (2002). Network ties, reputation, and the financing of new ventures. *Management Science*, 48, pp364-381.

Sheng, S., Zhou, K.Z., and Li, J.J. (2011). The effects of business and political ties on firm performance: evidence from China. *Journal of Marketing*, 75(1), pp1-15.

Shenkar, O. (2005). The Chinese Century. Upper Saddle River, NJ: Wharton School Publishing.

Shu, C., Page, A.L., Gao, S., and Jiang, X. (2012). Managerial ties and firm innovation: is knowledge creation a missing link? *Journal of Product Innovation Management*, 29(1), pp125-143.

Siu, W. and Bao, Q. (2008) 'Network strategies of small Chinese high-technology firms: a qualitative study'. *Journal of Product Innovation Management*, 25(1): 79-102.

Siu, W., Lin, T., Fang, W., and Liu, Z. (2006). An institutional analysis of the new product development process of small and medium enterprises (SMEs) in China, Hong Kong and Taiwan. Industrial Marketing Management, 35, pp323-335.

Sousa, C.M.P., Martinez-Lopez, F.J., and Coelho, F. (2008). The determinants of export performance: a review of the research in the literature between 1998 and 2005. *International Journal of Management Review*, 10(4), pp343-374.

Stam, W. and Elfring, T. (2008). Entrepreneurial orientation and new venture performance: the moderating role of intra- and extra-industry social capital. *Academy of Management Journal*, 51(1), pp97-111.

Stam, W., Arzlanian, S., and Elfring, T. (2014). Social capital of entrepreneurs and small firm performance: a meta-analysis of contextual and methodological moderators. *Journal of Business Venturing*, 29(1), pp152-173.

Starr, J. and MacMillan, I. (1990). Resource co-optation via social contracting: resource acquisition strategies for new ventures. *Strategic Management Journal*, Summer Special Issue, 11, 79-92.

Stevens, S.S. (1946). On the theory of scales of measurement. Science, New Series, 103(2684), pp677-680.

Stinchcombe, A.L. (1965). Organizations and social structure. In Handbook of Organizations, March JG (ed.). Rand McNally: Chicago, IL: 142-193.

Storey, D.J. (1994). Understanding the Small Business Sector. London: Routledge.

Su, Y., Tsang, E.W.K., and Peng, M.W. (2009). How do internal capabilities and external partnerships affect innovativeness? *Asia Pacific Journal of Management*, 26(2), pp309-331.

Su, Z., Xie, E., and Wang, D. (2013). Entrepreneurial orientation, managerial networking, and new venture performance in China. *Journal of Small Business Management*, doi: 10.1111/jsbm.12069.

Su, Z., Xie, E., and Li, Y. (2011)a. Entrepreneurial orientation and firm performance in new ventures and established firms. *Journal of Small Business Management*, 49, pp558-577.

Su, Z., Xie, E., Wang, D., and Li, Y. (2011)b. Entrepreneurial strategy making, firm resources, and performance: evidence from China. *Small Business Economies*, 36, pp235-247.

Suchman, M.C. (1995). Managing legitimacy: strategic and institutional approaches. *Academy of Management Review*, 20(3), pp571-610.

Sullivan, D.M. and Ford, C.M. (2014) How entrepreneurs use networks to address changing resource requirements during early venture development. *Entrepreneurship Theory and Practice*, 38(3): 551-574.

Tan, J. (1996). Regulatory environment and strategic orientations in an emerging economy: a study of Chinese private enterprise. *Entrepreneurship Theory and Practice*, 21, 31-46.

Tan, J. (2006). Growth of industry clusters and innovation: lessons from Beijing Zhongguancun Science Park. *Journal of Business Venturing*, 21(6), pp827-850.

Tan, J. and Litschert, R.J. (1994). Environment-strategy relationship and its performance implications: an empirical study of the Chinese electronics industry. *Strategic Management Journal*, 15, 1-20.

Tan, J., Li, S., and Xia, J. (2007). When 'iron fist,' 'visible hand,' and 'invisible hand' meet: firm-level effects of varying institutional environments in the Chinese economy. *Journal of Business Research*, 60, pp786-794.

Tan, J. and Tan, D. (2005). Environment-strategy co-evolution and co-alignment: a staged model of Chinese SOEs under transition. *Strategic Management Journal*, 26, pp141-157.

Tang, J., Tang, Z., Marino, L.D., Zhang, Y., and Li, Q. (2008). Exploring an inverted U-shape relationship between entrepreneurial orientation and performance in Chinese ventures. *Entrepreneurship Theory and Practice*, 32(1), pp219-239.

Tang, Z. and Tang, J. (2012). Entrepreneurial Orientation and SME performance in China's changing environment: the moderating effects of strategies. *Asia Pacific Journal of Management*, 29, 409-431.

Teece, D., Pisano, G. and Shuen, A. (1997) Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7): 509-533.

Tether, B. (2002). Who co-operates for innovation and why: an empirical analysis. *Research Policy*, 31(6), 947-967.

Tsai, K. (2009). Collaborative networks and product innovation performance: toward a contingency perspective. *Research Policy*, 38(5), pp765-778.

Tung, R. and van Witteloostuijn, A. (2008). From the editors: what makes a study sufficiently international? *Journal of International Business Studies*, 39(2), pp180-183.

Tushman, M.L. and Nadler, D.A. (1978). Information processing as an integrating concept in organisational design. *Academy of Management Review*, 3, pp613-624.

Tushman, M.L. and Nelson, R.R. (1990). Introduction: technology, organisations and innovation. *Administrative Science Quarterly*, 35, pp1-8.

Uzzi, B. (1997). Social structure and competition in interfirm networks: the paradox of embeddedness. *Administrative Science Quarterly*, 42, pp35-67.

Van Maanen, J. (Ed.) (1983) *Qualitative Methodology*. Beverly Hills, CA: Sage.

Vanhonacker, W.R., Zweig, D., and Chung, S.F. (2006). Transitional or social capital? Returnee versus local entrepreneurs. In The Management and Performance of China's Domestic Private Firms: Multidisciplinary Perspectives, Tsui, A., Bian, Y., Cheng, L (eds). ME Sharp: New York; 65-81.

Venkatraman, N. (1989). Strategic orientation of business enterprises: the construct, dimensionality, and measurement. *Management Science*, 35, pp942-962.

Verhees, F.J.H.M., and Meulenberg, M.T.G. (2004). Market orientation, innovativeness, product innovation, and performance in small firms. *Journal of Small Business Management*, 42(2), pp134-154.

Venkatraman, N. and Prescott, J.E. (1990). Environment-strategy-coalignment: an empirical test of its performance implications. *Strategic Management Journal*, 11(1), pp1-25.

Voss, H., Buckley, P.J., and Cross, A.R. (2010). The impact of home country institutional effects on the internationalisation strategy of Chinese firms. *Multinational Business Review*, 18(3), pp25-48.

Walsham, G. (1993). Interpreting information systems in organizations. Chichester: Wiley.

Wan, W.P. (2005). Country resource environments, firm capabilities, and corporate diversification strategies. *Journal of Management Studies*, 42(1), pp161-182.

Wan, W.P. and Hoskisson, R.E. (2003). Home country environment, corporate diversification strategies, and firm performance. *Academy of Management Journal*, 46(1), pp27-45.

Wang, C., Hong, J., Kafouros, M., and Boateng, A. (2012). What drives outward FDI of Chinese firms? Testing the explanatory power of three theoretical frameworks. *International Business Review*, 21(3), pp425-438.

Wang, C.L. (2008). Entrepreneurial orientation, learning orientation, and firm performance. *Entrepreneurship Theory and Practice*, 32(4), pp635-657.

Wang, C.L. and Chung, H.F.L. (2013). The moderating role of managerial ties in market orientation and innovation: an Asian perspective. *Journal of Business Research*, 66, pp2431-2437.

Wang, H. and Lu, J. (2012). Annual Report on Chinese Returnee Entrepreneurship. No.1. China: Social Science Academic Press.

Wei, Y., Zheng, N., Liu, X., and Lu, J. (2014). Expanding to outward foreign direct investment or not? A multi-dimensional analysis of entry mode transformation of Chinese private exporting firms. *International Business Review*, 23(2), pp356-370.

Welch, L.S. and Luostarinen, R.K. (1993) 'Inward-outward connections in internationalisation'. *Journal of International Marketing*, 1(1): 44-56.

Weiss, L.W. (1975). The concentration-profits relationship and antitrust. In H. Goldschmid, H.M. Mann, and J.F. Weston (Eds.), Industrial Concentration: The New Learning: 184-233. Boston: Little, Brown.

Weiss, R. (1994). Learning from strangers: the art and method of qualitative interview studies. New York: Free Press.

Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5, pp171-180.

Westhead, P., Wright, M., and Ucbasarn, D. (2001) 'The internationalization of new and small firms: a resource-based view'. *Journal of Business Venturing*, 16(4): 333-358.

Wiklund, J. and Shepherd, D. (2003) 'Knowledge-based resources, entrepreneurial orientation, and the performance of small and medium-sized businesses'. *Strategic Management Journal*, 24(13): 1307-1314.

Wiklund, J. and Shepherd, D. (2005) 'Entrepreneurial orientation and small business performance: a configurational approach'. *Journal of Business Venturing*, 20(1): 71-91.

Williamson, O.E. (1985). *The Economic Institutions of Capitalism: Firm, Markets, Relational Contracting*. New York: Free Press.

Williamson, O.E. (1991). Strategizing, economizing, and economic organisation. *Strategic Management Journal*, 12, 75-94.

Williams, L.J., Cote, J.A., and Buckley, M.R. (1989) Lack of method variance in self-reported affect and perceptions at work: reality or artefact? *Journal of Applied Pshchology*, 74: 462-468.

Wolpert, J.D. (2002) 'Breaking out of the innovation box'. *Harvard Business Review*, 80:77-83.

Woodcock, P., Beamish, P.W., and Makino, S. (1994) Ownership-based entry mode strategies and international performance. *Journal of International Business Studies*, 25(2): 253-273.

Wright, M., Dunford, B., and Snell, S. (2001) 'Human resources and the resource based view of the firm'. *Journal of Management*, 27: 701-721.

Wright, M., Liu, X., Buck, T., and Filatotchev, I. 2008. Returnee Entrepreneurs, science park location choice and performance: an analysis of high-technology SMEs in China. *Entrepreneurship Theory and Practice*, 32(1), pp.131-155.

Wright, M., Filatotchev, I., Hoskisson, R.E. and Peng, M.W. (2005). Strategy research in emerging economies: Challenging the conventional wisdom. *Journal of Management Studies*, 42(1), 1-33.

Wright, P.M., McMahan, G.C., and McWilliams, A. (1994). Human resource and sustained competitive advantage: a resource-based perspective. *International Journal of Human Resource Management*, 5(2), 301-326.

Wu, J. (2012). Technological collaboration in product innovation: the role of market competition and sectoral technological intensity. *Research Policy*, 41(2), pp489-496.

Xiao, L. (2011). Financing high-tech SMEs in China: a three-stage model of business development. *Entrepreneurship & Regional Development: An International Journal*, 23(3-4), pp217-234.

Xie, X.M., Zeng, S.X., and Tam, C.M. (2010) Overcoming barriers to innovation in SMEs in China: a perspective based cooperation network. *Innovation: Management, Policy and Practice*, 12(3), pp298-310.

Xin, K.R. and Pearce, J.L. (1996). Guanxi: Connections as substitutes for formal institutional support. *The Academy of Management Journal*, 39(6), pp1641-1658.

Xu, D. and Meyer, K.E. (2013). Linking theory and context: 'strategy research in emerging economies' after Wright et al. (2005). *Journal of Management Studies*, 50(7), pp1322-1346.

Yamakawa, Y., Peng, M.W., and Deeds, D.L. (2008). What drives new ventures to internationalise from emerging to developed economies? *Entrepreneurship Theory and Practice*, 32(1), pp59-82.

Yang, H., Zheng, Y., and Zhao, X. (2014) 'Exploration or exploitation? Small firms' alliance strategies with large firms'. *Strategic Management Journal*, 35: 146-157.

Yang, J.Y. and Li, J. (2008) 'The development of entrepreneurship in China'. *Asia Pacific Journal of Management*, 25: 335-359.

Yiu, D.W., Lau, C., and Bruton, G.D. (2007). International venturing by emerging economy firms: the effects of firm capabilities, home country networks, and corporate entrepreneurship. *Journal of International Business Studies*, 38(4), pp519-540.

Zaheer, S. (1995). Overcoming the liability of foreignness. *Academy of Management Journal*, 38, pp341-363.

Zahra, S.A., Ireland, R.D., Hitt, M.A. (2000). International expansion by new venture firms: international diversity, mode of market entry, technological learning, and performance. *Academy of Management Journal*, 43(5), pp925-950.

Zahra, S.A. and Covin, J.G. (1993) 'Business strategy, technology policy, and company performance'. *Strategic Management Journal*, 14(6): 451-478.

Zapalska, A.M. and Edwards, W. (2001) 'Chinese entrepreneurship in a cultural and economic perspective'. *Journal of Small Business Management*, 39(3): 286-292

Zeng, M., and Williamson, P.J. (2003) 'The hidden dragons'. *Harvard Business Review*, 81(5), 92-99.

Zeng, S.X., Xie, X.M., and Tam, C.M. (2010). Relationship between cooperation networks and innovation performance of SMEs. *Technovation*, 30(3), pp181-194.

Zhang, C., Zeng, D.Z., Mako, W.P., and Seward, J. (2009) *Promoting Enterprises-Led Innovation in China*. Washington, DC: The World Bank.

Zhang, J. and Wu, W. P. (2013). Social capital and new product development outcomes: the mediating role of sensing capability in Chinese high-tech firms. *Journal of World Business*, 48(4), pp539-548.

Zhang, W., Cooper, W.W., Deng, H., Parker, B.R., and Ruefli, T.W. (2010). Entrepreneurial talent and economic development in China. *Socio-Economic Planning Sciences*, 44, pp178-192.

Zhang, Y. and Li, H. (2010). Innovation search of new ventures in a technology cluster: the role of ties with service intermediaries. *Strategic Management Journal*, 31(1), pp88-109.

Zhang, Y., Yang, J., Tang, J., Au, K., and Xue, H. (2013) 'Prior experience and social class as moderators of the planning-performance relationship in China's emerging economy'. *Strategic Entrepreneurship Journal*, 7(3): 214-229.

Zhao, L. and Aram, J.D. (1995). Networking and growth of young technology-intensive ventures in China. *Journal of Business Venturing*, 10(5), pp349-370.

Zhao, Y., Li, Y., Lee, S.H., and Chen, L.B. (2011). Entrepreneurial orientation, organizational learning, and performance: evidence from China. *Entrepreneurship Theory and Practice*, 35(2), pp292-317.

Zhou, K.Z., Li, J.J., Zhou, N., and Su, C. (2008) 'Market orientation, job satisfaction, product quality, and firm performance: evidence from China'. *Strategic Management Journal*, 29(9): 985-1000.

Zhou, K.Z., Gao, G.Y., Yang, Z., and Zhou, N. (2005) 'Developing strategic orientation in China: antecedents and consequences of market and innovation orientations'. *Journal of Business Research*, 58: 1049-1058.

Zhou, K.Z. and Li, C.B. (2007) 'How does strategic orientation matter in Chinese firms?' *Asia Pacific Journal of Management*, 24(4): 447-466.

Zhou, L., Wu, W., and Luo, X. (2007) Internationalization and the performance of born-global SMEs: the mediating role of social networks. *Journal of International Business Studies*, 38(4): 673-690.

Zhou, Y. and Hsu, J. (2011) 'Divergent engagements: roles and strategies of Taiwanese and mainland Chinese returnee entrepreneurs in the IT industry'. *Global Networks*, 11(3): 398-419.

Zhu, D. and Tann, J. (2005) 'A regional innovation system in a small-sized region: a clustering model in Zhongguancun science park'. *Technology Analysis and Strategic Management*, 17(3): 375-390.

Zhu, Y., Wittmann, X., and Peng, M.W. (2012) 'Institution-based barriers to innovation in SMEs in China'. *Asia Pacific Journal of Management*, 29(4): 1131-1142.

Zhu, Y.M. and Sanderson, J.W. (2009) 'The key obstacles and countermeasure against development of innovative SMEs in China'. *China Soft Science*, 9: 23-31.

Zikmund, W.G. (2003). *Business Research Methods*. Mason, OH: South-Western.

Zou, S., Fang, E., and Zhao, S. (2003) 'The effect of export marketing capabilities on export performance: an investigation of Chinese exporters'. *Journal of International Marketing*, 11(4): 32-55.

Zou, S. and Stan, S. (1998) 'The determinants of export performance: a review of the empirical literature between 1987 and 1997'. *International Marketing Review*, 15: 333-356.
Zucker, L. (1977) 'The role of institutionalization in cultural perspective'. *American Sociological Review*, 421: 726-743.

Zweig, D. (2006) Learning to compete: China's efforts to encourage a 'reverse brain drain'. In Competing for Global Talent. Kuptsch, C. and Fong, P.E. The International Institute for Labour Studies. France.