

Market Orientation, Alliance Governance and Innovation

A thesis submitted to The University of Manchester for the degree of

Doctor of Business Administration

in the Faculty of Humanities

Year of submission: 2018

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LIST OF ABBREVIATIONS

ABBREVIATION	EXPLANATION
AG.....	Alliance governance
CG.....	Contract governance
CoO.....	Competitor orientation
CuO.....	Customer orientation
IC.....	Interfunctional coordination
II.....	Incremental innovation
MO.....	Market orientation
RI.....	Radical innovation
TG.....	Trust governance

ABSTRACT

Innovation is the source of building competitive advantages in an enterprise, industry or country. With the increasing competition in the global market, as well as the ever-changing market demand, companies must strategically cultivate innovation-based competitive advantages. In the context of economic transition, how to play an active role by market orientation and thus effectively enhance their level of innovation, is currently one of the core issues the companies face within the process to enhance their capabilities of independent innovation. Therefore, from the perspective of an intermediating mechanism between market orientation and innovation, this study focuses in-depth on how to enhance innovation for market-oriented firms on the basis of related theoretical and empirical research.

This study first reviews the existing literature on the relationship between market orientation and innovation, and then puts forward that distributor alliance governance mechanism may be the middle mechanism of in the link between market orientation and technological innovation. This research focuses on this research question because the existing literature did not study the impact mechanism of market orientation on innovation although some studies have confirmed that a market-oriented company will be more likely to achieve innovations. In business practices, firms maintaining market orientation cannot necessarily be able to succeed in innovation. Therefore, whether in theory or in practice, there is the need to explore the middle mechanism between market orientation and enterprise

innovation. Manufacturing enterprises' innovations are often based on an accurate grasp of consumer needs, competitor activities and industry-changing technologies. When companies understand this information, they may be able to research and develop innovative products and services which is targeted on the specific needs of consumers, thus win in the competition. However, manufacturers often do not directly deal with consumers, and cannot always carry out market research. The distributor alliances are often the closer part of the consumers. Distributors are not only able to gather information about the feedback of consumers, but also convenient to collect information on business activities of manufacturers' competitors. Therefore, the enterprises that take proper governance on distributors are likely to provide a good foundation for business innovation. Therefore, this study proposes alliance governance may be the mediating mechanism between market orientation and technological innovation.

This research discusses the important role of alliance governance (AG) as a mediating mechanism in the relationship between market orientation (MO) and innovation, and compares the differences between the influences of different dimensions. The study aims to reveal the influence mechanism of different types of alliance governance on the relationship between market orientation and innovation. Based on a sample of 122 Chinese manufacturing enterprises, the study finds that: (1) contractual governance (CG) will increase when customer orientation (CuO) and competitor orientation (CoO) become higher, and contractual governance will affect radical innovation (RI) in a U-shaped way; (2) trust governance (TG) will increase

when inter-functional coordination (IC) becomes higher, and trust governance has a positive impact on both radical innovation and incremental innovation (II). The findings are meaningful for research into the relationship between market orientation and innovation, and have managerial implications in helping different types of market-oriented firms make appropriate choices for alliance governance in order to improve both radical and incremental innovation.

Keywords: market orientation; alliance governance; radical innovation; incremental innovation

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DEDICATED TO MY FUTURE & MY FAMILY

ACKNOWLEDGEMENTS

I am very grateful to my supervisor Professor Christopher Holland and my co-supervisor Professor Yuan Li, not only for sharing their academic expertise but also for the patience and professional and paternal support they have generously provided over the past five years. I strongly appreciate the academic freedom I was afforded by them.

I am indebted to my family. This thesis is dedicated to them. Thanks for supporting me all through my studies. Without their support, this thesis could not be completed.

Finally, I would like to express my gratitude to all my friends who helped me during my fieldwork and studies. You guys are my greatest wealth of life.

Yao Chen

Shanghai

July 2018

CHAPTER 1: INTRODUCTION TO THE RESEARCH

This chapter provides an outline of the research, including research background, research questions and strategy, thesis structure, research findings and main arguments, and main contributions. In the research background section, I discuss the developing situation of Chinese manufacturers and their difficulties in innovation. Then I figure out the research gaps between market orientation and innovation by reviewing the several main streams in the literature on market orientation and innovation. In the research questions and strategy section, I focus my research question on the missing link between market orientation and innovation, and develop my research strategy (Figure 5). In the thesis structure section, I make a brief introduction to the structure. Then, in the research findings section, I briefly report the statistic results supporting our hypotheses, which imply that distributor governance is the mediating mechanism between market orientation and innovation. Furthermore, I represent the main contributions that this thesis will make to the market orientation and innovation literature, which will be depicted in detail in chapter 6.

1.1 Research background

1.1.1 Developing situation of Chinese manufacturers

With international economic and technological competition becoming increasingly fierce, China strives to develop the innovation-driven economy and build an

innovative country. Since the third technological revolution, with the inventions and industrialization of atomic energy, computers, space technology, and biotechnology as the main indicator, a growing number of major scientific and technological breakthroughs have emerged and they have been successfully industrialized. Many companies develop rapidly and expand into world-class enterprises by virtue of rapid commercialization of innovative technologies. This process promotes industrial restructuring of the world and has a profound impact on the world economy. United States, Japan, Germany and other countries, making technological innovation as the main driving force, have enhanced their comprehensive strength after decades of development, and have profoundly changed the world economic and political situation. As science and technology increasingly playing a prominent role in promoting productivity, the world's major developed countries and their enterprises set off a new round of wave of technological innovation and economic development to seek new advantages since the 1990s, which induce the emergence of Intel, Microsoft, Cisco, Apple, Samsung, Ericsson, Huawei and other outstanding world-class enterprises. In the early 1990s, the United States implemented the core industrial technology innovation strategy, and the R&D investment growth in the United States increased 56%, accounting for GDP 2.5% during 1994–2000. With the implementation of the “Information Highway Program”, Advanced Technology Program (ATP), and a large number of Science and Technology Innovation Programs, the last 10 years of the 20th Century have witnessed the sustained and

rapid economic growth, and the share of world GDP of the United States has raised from 24.2% in 1990 to 31.8% in 2001 (Yu et al., 2012). In the same period, Japan, Germany, Korea, Brazil and other countries have also increased their investments in scientific and technological innovation. By the early 2000s, there were a number of world-recognized innovative countries, including the United States, Japan, Germany, Sweden, South Korea, and other countries. Core driving force of innovation-oriented country's economic and social development is technological innovation. The main features of innovative countries are the strong ability of independent innovation: (1) R&D investment accounted for over 2% of GDP; (2) the contribution of scientific and technological progress to economic growth rate was over 70%, less than 30% dependence on foreign technology. In 2006, China proposed the goal of becoming an innovative country by 2020, issued the "National Long-term Science and Technology Development Plan (2006-2020)", promulgated a series of supporting policies, and implemented a large number of scientific and technological innovation programs or projects. This Plan, aiming at biology, information, new materials, advanced manufacturing, new energy, marine and other international cutting-edge technologies, promotes scientific and technological innovation, actively participates in international economic and technological competition, constantly enhances scientific and technological innovation-driven economic and social development capacity, and tries to achieve the progressive development of innovation-driven economy.

China's "Two Sessions" government work report in 2013 mentioned that:

"Chinese manufacturing industry ranks first in scale in the world, and has become an important national economic leader and pillar industry". However, although China is a big manufacturing country, it is still faced with the "too big yet not strong" indisputable fact. Premier Keqiang Li further pointed out in 2014: in order to make China move from "Made in China" towards "wisdom made in China", technological innovation is the key to national development, and China should rely on innovation support and thus lead to economic structural optimization and upgrading promotion, and then push China to jump to the global industry value chain. In 2015, Premier Li once again raised that the manufacturing industry is the industry that has great advantages for us. China will implement the "Made in China 2025", which designed top-level design planning roadmap for Chinese manufacturing industry for the next 10 years, adhere to innovation-driven, intelligent restructuring and accelerating the manufacturing power conversion process. Technological innovation is the internal power source of competitive advantages and dominant elements for a country or region to maintain sustained economic growth. At the theoretical level, the function of technological innovation to promote economic development has been well demonstrated. However, in the practices, the process of achieving technological innovation takes more time. With the features of peculiarity, difficult-to-predict, and the high failure rate of investment, it is difficult to establish incentives and training mechanisms for technological innovation. Difficulties and problems have

increasingly become prominent in China's current economic development, and the solution is to adjust the economic structure and promote the transformation and upgrading. Corporate restructuring and upgrading will promote economic restructuring and upgrading. On the one hand, they can upgrade traditional industries by enterprises adopting advanced technology and modern management transformation; on the other hand, they help achieve industrial upgrading through technological innovation, and strive to develop strategic emerging industries to open up new economic growth point. Chinese companies committed to grasping proprietary technology to accelerate improvements in international competitiveness. According to UN Industrial Development Organization (UNIDO) "World Industrial Development Report 2009", the scale of Chinese manufacturing output ranks first in the world, second only to the scale of the United States. China has more than 200 kinds of industrial production in the world, but most companies are in global manufacturing value chain of low-end labor-intensive manufacturing sector, resulting in low-profit margins. Thus, the main competitive advantage is low cost. Visual depictions of global manufacturing value chain, "smiling curve", show that firms which master value chains, such as core technology, design, branding, and marketing channels, make big profit, but the manufacturing sector profits lowest (see Figure 1). According to a 2009 State Department documents, iron and steel, cement, plate glass, electrolytic silver, shipbuilding and other industries experienced low-level investment of reconstruction, leading to serious overcapacity, lower

product price, and business losses. Thus, the development of competition environment-related businesses deteriorated significantly. In sharp contrast, the Chinese optical fiber manufacturing equipment, integrated circuit chip manufacturing equipment, shipbuilding key equipment, high-end CNC machine tools, LED key equipment, solar photovoltaic and other key equipment manufacturing products of domestic enterprises have to rely mainly on imports. Computers, mobile phones, DVD and other industrial products also have to rely on imports of key components, resulting in most of the manufacturing profits acquired by Western enterprises in developed countries. Wang (2012) points out that “Chinese LMEs R&D expenditure to sales ratio is 0.96%, much lower than the 3% in developed countries; enterprises which implement R&D activities account for 8.5; enterprises which have the invention patents account for 4.7%. Most enterprises have the following problems such as a low level of price competition, a lack of investment in technological innovation, a lack of independent brand, lower competitiveness, lower profits. Therefore, it is difficult to adapt to international competition and the domestic market. Lacking international competitiveness is the most realistic, urgent, and notable problems and fundamental and strategic issues that China, the world's major powers, has to face.

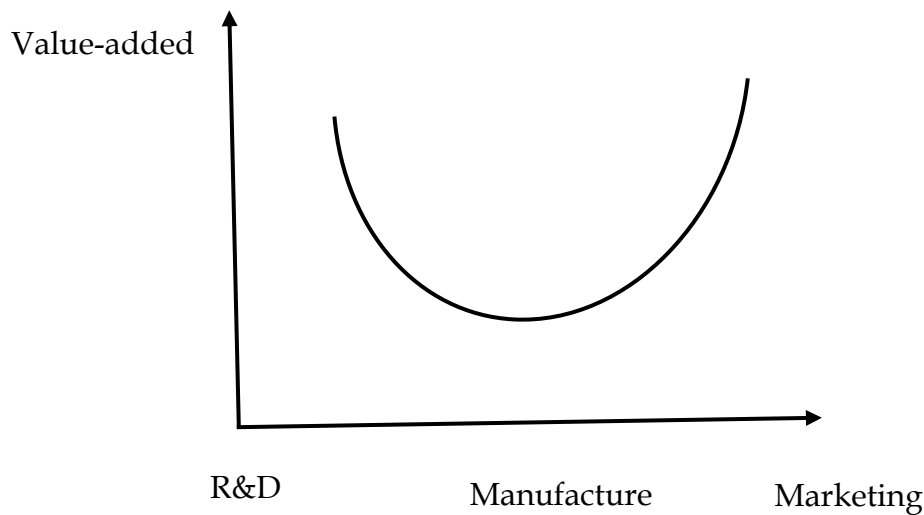


Figure 1 Smiling curve

On the other hand, according to the "2011 National Science and Technology Funds Statistical Bulletin," in 2011 China R&D investment was 868.7 billion yuan, accounting for 1.84% GDP, including 657.93 billion yuan business R&D which accounted for 75.7% of the R&D investment. China also invested much more in science and technology, and enterprises were the main investor in technological innovation. In recent years, more and more enterprises, Huawei, ZTE, Vimicro, and Haier, emphasize R&D and target international market to develop their competitiveness, achieving remarkable success. With more national R&D support and R&D investment in enterprises, the technological innovation capability will gradually grow up, and there will be more and more enterprises with independent

intellectual property rights, gradually enhancing the international competitiveness. Enterprises need to broaden the path of technological innovation, take advantage of technological innovation, accelerate technology development. Since the reform and opening up, Chinese enterprises continue to introduce advanced technology from Western countries economic development and narrow the economic and technological gap with the developed Western countries. As with the Western developed countries continued to narrow the technology gap, domestic enterprises bring in the most advanced technology of much-needed international industry to lead the future development becoming impossible. The vast majority of these technologies have to rely on independent research and development. Wu et al. (2007) study the Chinese medium-sized enterprises' technological dependence on foreign technology (technological dependence = technology import expenditures / the sum of technology introduction expenditures and R&D expenditures) during 1995–2004, and find that the technological dependence on foreign technology has declined from 255% in 1995 gradually to 39% in 2004. This shows that technology investment introduced by domestic enterprises is relatively decreased, capabilities of independent research and development significantly enhanced (see Figure 2). With the technology gap with foreign enterprises and domestic and international business increasingly competitive, domestic enterprises must turn to the future path of independent development of technological innovation and constantly strive to catch up with the world advanced technology. Brezis et al. (1993) proposes leapfrog theory

that due to technical and technological first-mover disadvantage certain countries to introduce the country's advantage, policy intervention, post-prone countries can better grasp the opportunity and technological innovation, and its technological innovation may catch up with its of first-mover countries. Wu et al. (2001) propose "secondary innovation theory" that the introduction of technology in developing countries in the technological paradigm, along with established technological trajectory of technological innovation, makes full use of the advantage of the introduction of technology, achieves the faster technology-exporting countries rate of technological development. Dutch scholar Luc Soete (1985) first proposes the concept of technological leapfrogging. South Korean scholars Lee and Lim (2001) propose that the country has two ways, developing a new path and path leapfrog, for technological leapfrogging. The developing a new path and path leapfrog of technological leapfrogging ships were achieved by the breakthrough innovation and incremental innovation respectively, but most companies prefer incremental technology innovation based on existing technology, and pay less attention to the breakthrough technology innovation. After these theories explain prone countries through independent technological innovation can reduce the gap with the world advanced technology, even beyond the developed countries advanced technology. China 3G communication technology and laser typesetting technology are typical cases of the breakthrough technological leap of China in the technology sector. 100MM watt coal-fired generating units and large hydro and other technologies

successfully catching up with the world's advanced level were incremental technology. Vigorously explore breakthrough technology commercialization effective mechanism to speed up the development of disruptive technology innovation, and strive to achieve technological innovation curve "overtaking." Low rate of scientific and technological achievements is long plagued China's economic and technological development of chronic diseases Tang and Sun (2006) find that more than 80 million Chinese patents outcomes only about 10% are converted, far less than 60% in developed countries 40% of the world average (see Figure 3). Transformation rate seriously hampered technological innovation and economic development, and is not conducive to technological innovation and development. Transformation rate is for many reasons, of a technical nature and characteristics of the most important reasons. From the nature of the distinction between technological innovation, it can be divided into incremental technology innovation and breakthrough technological innovation. Incremental technology innovation in the art orbit and technological paradigm, through cumulative continuous technological improvement, achieves technological innovation. Such technological innovation is most common in economic and social development. Disruptive Technology Innovation built on the principles of a new technology or engineering principles. The general provision of the new Jian Technology Track, technological innovation in the new technological paradigm, often represents the forefront of technological progress, and products key performance indicators increased

significantly. The main features of disruptive technology innovation include a long time-consuming, often taking 10 years or more; high degree of uncertainty and unpredictability, there are multiple starts and end points; focusing on innovation and key personnel involved in accidents often lead to random changes of the great; huge investment cost is often beyond the budget; it can produce excellent performance breakthrough products, basic industry and even change the competitive landscape or Jian innovation industries. And general technological innovation ratio, disruptive technology innovation uncertainty and higher risks in technology, markets, and business models, the most prominent problem is the low success rate. Disruptive Technology Innovation practice has a long history, dating back to the minimum of the British Industrial Revolution of the eighteenth century, but only about theory, emerging in the 1980s. Chinese scholars began Jian related theory about 10 years. Existing researches mainly focused on basic theoretical research breakthrough technological innovation, breakthrough technology innovation relevant provider of the few studies and the lack of systematic, but business is one of the most critical aspects of disruptive technology innovation. System of breakthrough technology commercialization effective mechanism promotes innovation and accelerates the development of breakthrough technologies. It may accelerate the pace of the process beyond the world of advanced technology, encouraging enterprises to grow rapidly.

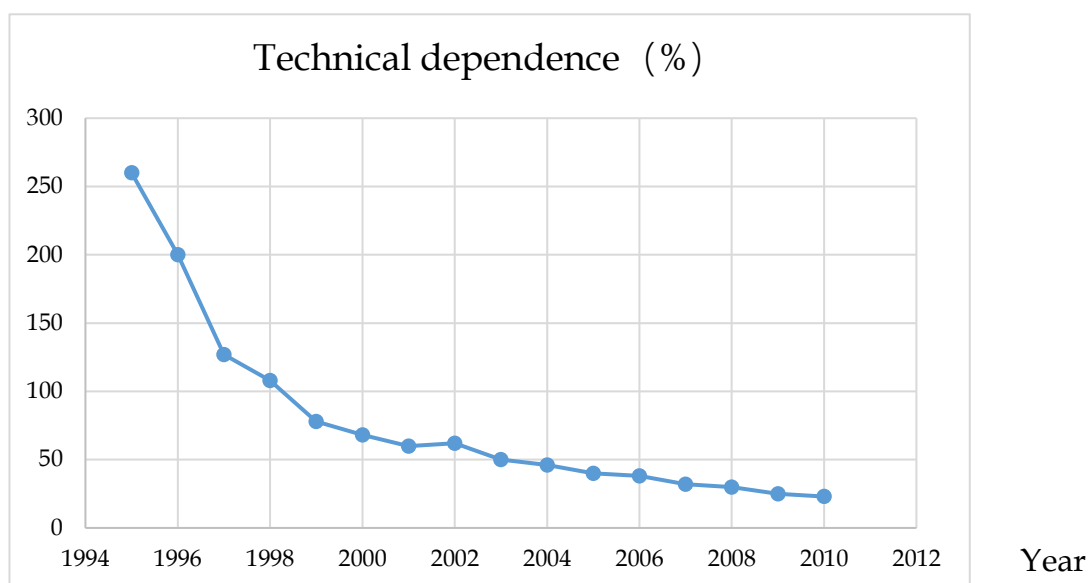


Figure 2 Technical dependence of Chinese large- and medium-sized enterprises during 1995-2010

Source: Drawn by the author based on the China Statistic Yearbook of Science and Technology during 1995-2010.

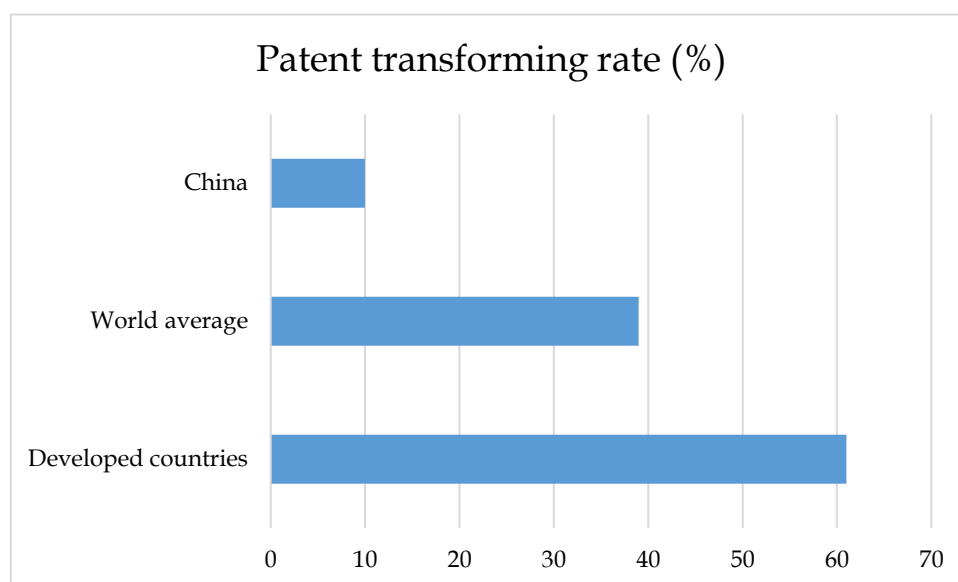


Figure 3 Comparison of patent conversion rate among China, the world average, and the developed countries in 2006

Source: Drawn by the author based on relevant information.

1.1.2 Research gaps between market orientation and innovation

With the arrival of a buyer's market, the marketing concept gradually rises. Under the guidance of this concept, corporate focus on industry changes, customer demands, and competitor activities in the external environment. The information about the external environments is shared within the enterprises, and accordingly, they take quick reactions to the external changes in order to achieve a harmonious enterprise and external environment. Following the wide acceptance of marketing concept, the study on market orientation is prosperous since the 1990s.

In recent years, the impact of market orientation on innovation has attracted the sustaining attention of scholars (Im and Workman, 2004; Zhou, Yim and Tse, 2005; Morgan, Vorhies and Mason, 2009). However, different streams hold different views on this topic. Early stream claims that market orientation has a direct impact on innovation, belong which some scholars believe that market orientation helps companies better understand customer needs and competitors and thus promotes innovation (Narver and Slater, 1993; Jaworski and Kohli, 1990), while other scholars stress that market-oriented companies are too concerned about the current customer needs to fulfill real innovations (Christensen and Bower, 1996; Voss and Voss, 2000). Thereafter, mediating stream claims that innovation will not be influenced directly by market orientation as organizational culture, but through some mediating mechanisms such as organizational learning and creativity (Zhou, Yim and Tse,

2005). Moderating stream argues why the topic whether market orientation will promote innovation or not is debated is because some moderating mechanisms exist (Li and Atuahene-Gima, 2001). Specifically, they find that under different levels of learning orientation, market growth or entrepreneurial orientation, market orientation will lead to different innovative performance (Gatignon and Xuereb, 1997; Hurley and Hult, 1998; Matsuno, Mentzer, and Özsomer, 2002). And the recent mainstream advocates a view of market orientation and innovation as multidimensional concepts, and then the divergent findings in previous research can be explained by the differential effects of different dimensions on innovation (Atuahene-Gima and Ko, 2001; Zhou et al., 2007).

However, three gaps exist in the literature. First, the prior research focuses more on the direct impact of market orientation on innovation, ignoring the potential middle mechanisms between market orientation as a type of organizational cognition and innovation as an organizational behavior. Especially for manufacturing firms, they always feel difficult to acquire information about customer needs and competitors' activities accurately and quickly in order to support their market-oriented corporate culture due to their long distance to customers. Therefore, effective alliance governance for distributors which are nearer to market is likely to become an important mean to ensure innovation. Second, although research has gradually viewed market orientation and innovation as multidimensional concepts, the differential effects of different dimensions of market

orientation have not yet been effectively verified. Third, most of the existing research is rooted in the Western countries, but studies contraposing Chinese firms in the special economic environment are relatively scarce. At present, China is in a period of transition to market economies that the legal system is remained to be improved, and thus Chinese enterprises particularly value relational governance in an alliance relationship (Gao, Wang and Chen, 2012). In this context, research can be used to guide the practices of Chinese firms which will be explored further.

This study suggests that seeking effective alliance governance is an important mean to enhance innovations for market-oriented manufacturing firms. In particular, we should treat market orientation as a multidimensional concept, Customer orientation, competitor orientation, and internal coordination, three dimensions of market orientation are likely to lead to differences in alliance governance as contractual governance or trust governance. Moreover, different governance patterns may help firms get market information of different aspects, resulting in different types of innovation (incremental innovation or radical innovation). In this study, we identify the key role of alliance governance as the middle mechanism in the relationship between market orientation and innovation, compare thoroughly the differential impacts of three dimensions of market orientation on two alliance governance patterns, and distinguish the various innovative effects caused by the two alliance governance patterns.

1.2 Research questions and strategy

Following the background of Chinese manufacturing firms, my research contexts are (1) rapid growth of technology worldwide; however, (2) gaps of technical capabilities between Chinese firms and firms from developed countries; (3) low value added of Chinese manufacturing firms. Here comes the management problem: why are Chinese manufacturing firms inefficient in innovation? Based upon this management problem, I made several theoretical inspections to make sure my real research questions. First, I asked what is important in innovation. Some studies argue that market orientation may be critical in innovating because market-oriented firms may obtain more information about changes of customer needs, competitor activities, and industrial technology, which are very helpful in making innovations. However, does market orientation guarantee innovations? According to my literature review on the link between market orientation and innovation, the answer is no. Therefore, how to link market orientation and innovation becomes crucial to address the management problem. Considering alliances' critical function of obtaining market information and knowledge, then, the main research question is: is alliance governance the middle mechanism between market orientation and innovation? Additionally, there two sub-questions: (1) How does market orientation influence alliance governance? (2) How does alliance governance affect innovation? If alliance governance is indeed the middle mechanism between market orientation

and innovation, market-oriented firms can choose a proper type of alliance governance in order to boost their innovation. Figure 4 shows the research questions.

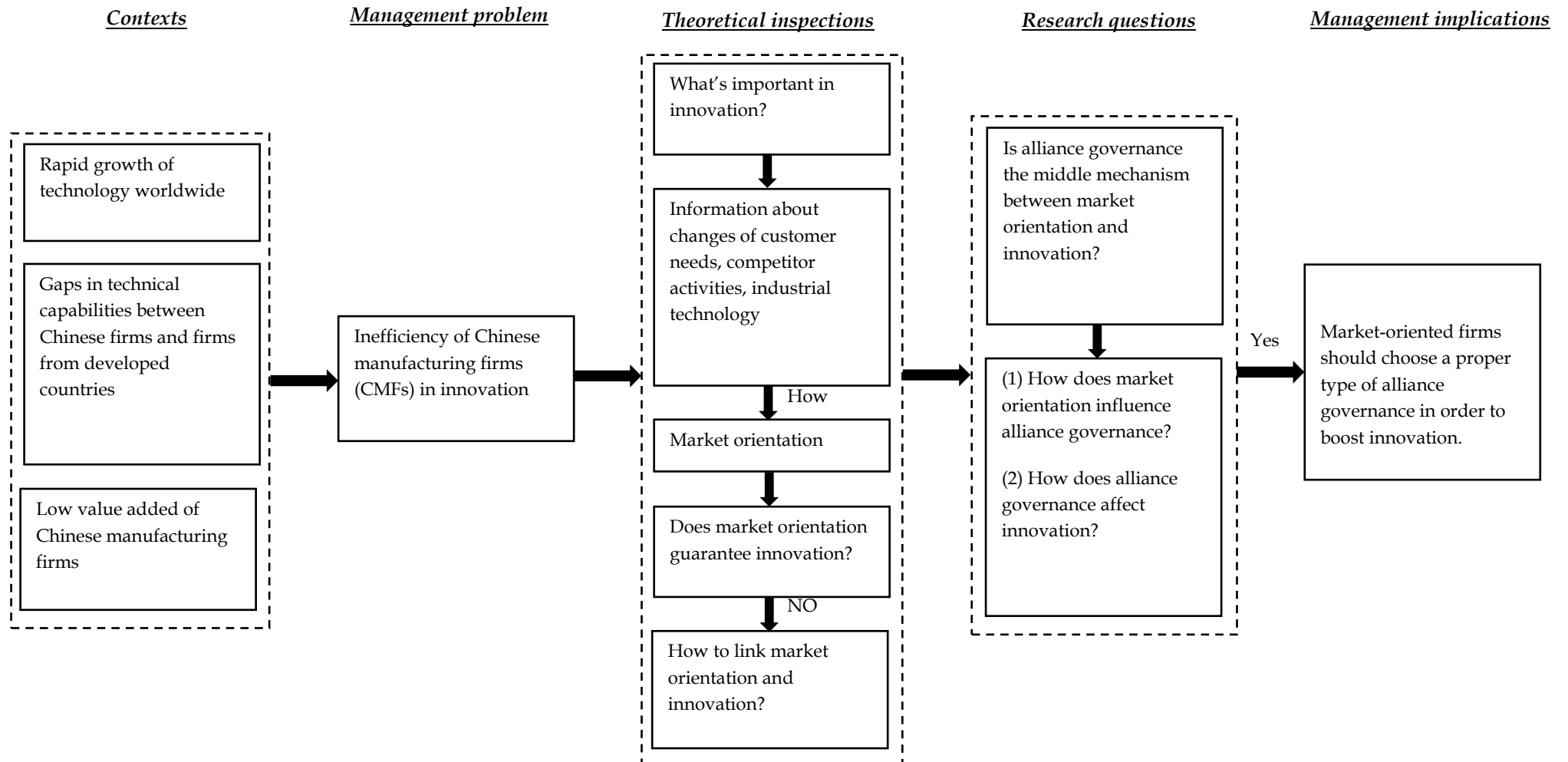


Figure 4 Research questions and hypotheses

Overall, my research will be conducted in three steps. First, I am going to find out that is there a middle mechanism between market orientation and innovation. In order to find the answer, I will conduct a case study of DC Group. Second, I will find out are there two dimensions of this middle mechanism. A multi-case study will help to answer this question. Finally, I will find out how does this middle mechanism affect in the relationship between market orientation and innovation. The answer will lie in the quantitative statistics analysis of survey data.

Therefore, Figure 5 illustrates my research strategy of this study. First, my research objective is to explore whether alliance governance is the missing link between market orientation and innovation. Second, I will make the literature review in order to (1) understand market orientation theory and innovation theory, (2) understand the relationship between market orientation and innovation, and (3) find out theoretical foundations to support alliance governance as a missing link between market orientation and innovation. Third, I will make firm interviews and semi-structured interviews, and find support for alliance governance as a mediating mechanism from firm practices, and develop a better understanding of the relationship among market orientation, alliance governance, and innovation. Forth, I will make a questionnaire survey to collect data for hypotheses testing. Finally, I will run qualitative and quantitative analyses to confirm the relationship from firm interviews and test further on the relationship among different dimensions of variables according to the theoretical framework.

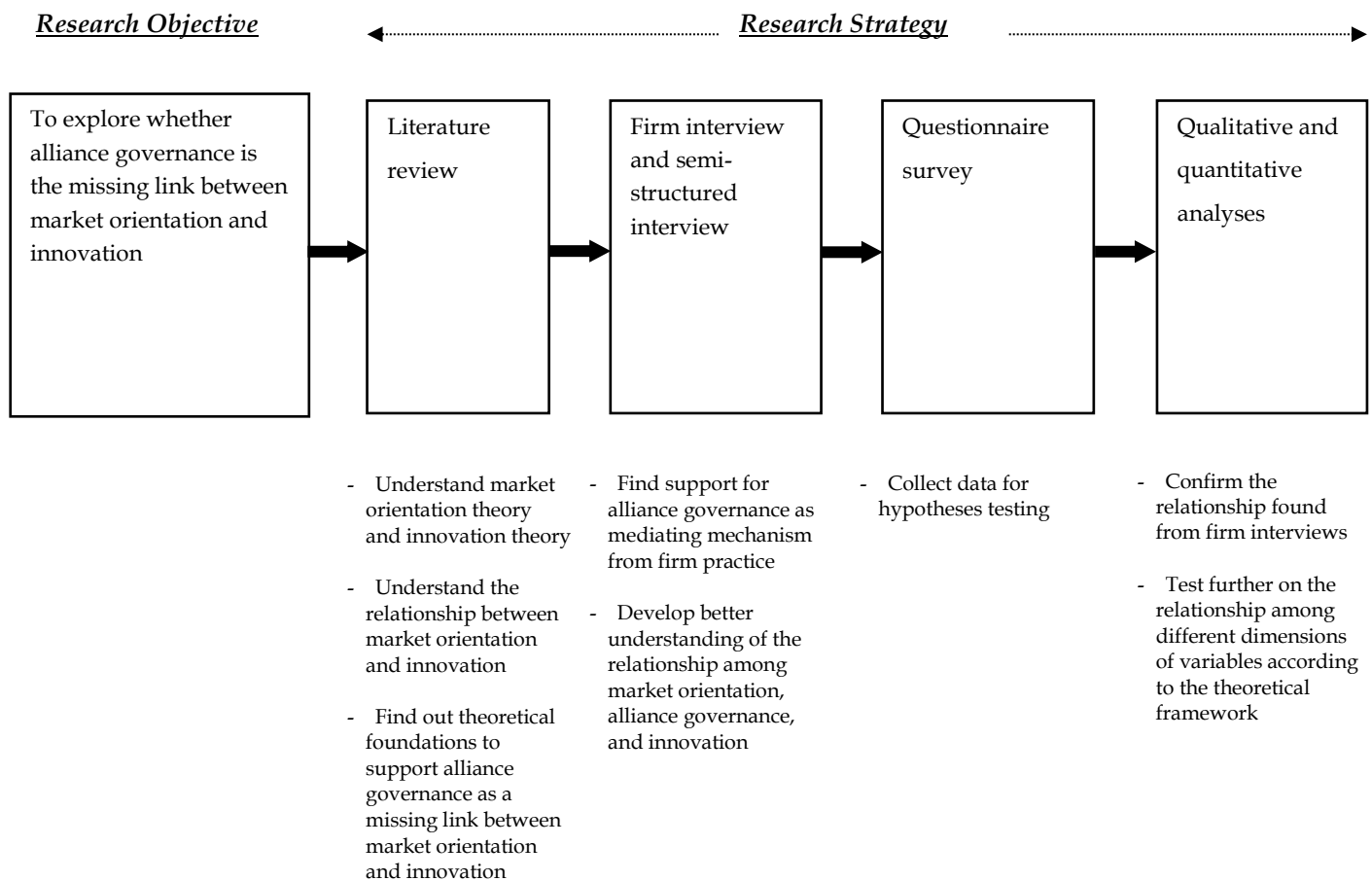


Figure 5 Research strategy

1.3 Thesis structure

Figure 6 shows the research outline of my thesis.

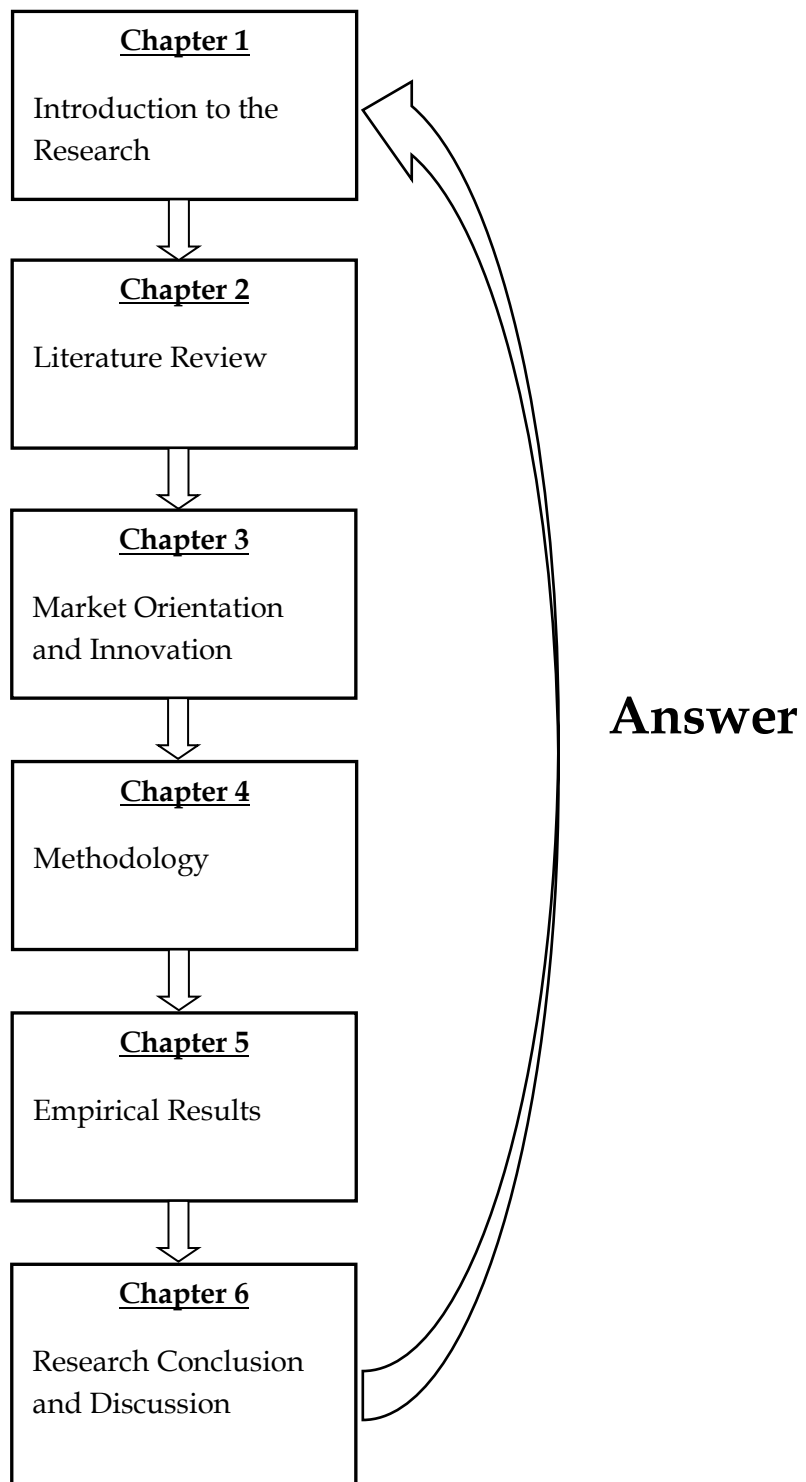


Figure 6 Research outline

Chapter 1 provides an outline of the research, including research background, research questions and strategy, thesis structure, research findings and main arguments, and main contributions. In the research background section, I discuss the developing situation of Chinese manufacturers and their difficulties in innovation. Then I figure out the research gaps between market orientation and innovation by reviewing the several main streams in the literature on market orientation and innovation. In the research questions and strategy section, I focus my research question on the missing link between market orientation and innovation and develop my research strategy. In the thesis structure section, I make a brief introduction to the structure. Then, in the research findings section, I briefly report the statistic results supporting our hypotheses, which imply that distributor governance is the mediating mechanism between market orientation and innovation. Furthermore, I represent the main contributions that this thesis will make to the market orientation and innovation literature, which will be depicted in detail in chapter 6.

Chapter 2 aims to review and have a better understanding of theories and literature relevant to this research. It contains five parts. The first part of this chapter will review the theory and literature on market orientation. The second part of the chapter will then focus on a review of the theory and literature on innovation. This part will provide us with a better understanding of the definition and classifications of innovation. Furthermore, in the third part, literature on the relationship between market orientation and innovation is reviewed. In this part, import papers on this topic will be analyzed and help us find out the appropriate key research direction for

this thesis. The fourth part exactly follows the third part and reviews the theory and literature on alliance governance. Finally, a conclusion pointing out the limitations of existing literature and further research directions is drawn at the end of the chapter.

Chapter 3 is about hypothesis development. First, I propose my conceptual framework which makes distributor governance as the mediating mechanism between market orientation and innovation according to the research gaps I have discussed in chapter 1. Second, hypotheses, which are about the relationship among variables are justified by the literature, are raised. Following the classic literature, I divided market orientation into three dimensions, i.e., customer orientation, competitor orientation, and inter-functional coordination. Distributor governance is divided into two dimensions, i.e., contractual governance, and trust governance. Moreover, innovation is divided into two dimensions as well, that is, incremental innovation, and radical innovation. I hypothesize the relationship between market orientation and distributor governance, and the relationship between distributor governance and innovation, respectively.

Chapter 4 elaborates on the research design employed in this study, including the rationale for the selection of such a method. Specifically, it explains why the selected research methodology is appropriate for this thesis and how it has been implemented in light of the research questions. Moreover, this chapter illustrates data collection techniques selected in accordance with the chosen research method, so that my research questions can be answered adequately. As mentioned in chapter 3, my hypotheses argue that the effect of market orientation on innovation could not be direct but indirect via alliance governance. Consequently, the research design

methodology that can appropriately answer the specific research questions proposed in chapter 1 will have to involve both qualitative and quantitative methods. The qualitative research method gathers the required data and information using literature review, expert interview and semi-structured firm interview designed to help examine and provide a better understanding of the nature, characteristics, roles, and activities of each typical firm, as well as the relationships between market orientation and innovation. Thereafter, the quantitative method is employed, using a survey to verify and confirm the findings obtained from the qualitative research stage. The following sections elaborate on the reason why the mixed research paradigm of qualitative and quantitative methods is the most appropriate research tool to use to answer my proposed research questions and explain which data collection technique should be used for each research method to gather the information and data needed to help test my hypotheses.

Chapter 5 is concerned with a case study of the DC Group, the case study of 7 Chinese Chemical firms, and the statistical analysis results. The objective of this chapter is to both qualitatively and quantitatively explore the nature of market orientation, distributor governance, and innovation in Chinese manufacturing industries. This chapter, aiming to test hypotheses we proposed on the relationship among market orientation, alliance governance, and innovation using data from marketing alliances formed by manufacturing firms and distributors in China, draws the following two conclusions: (1) Customer orientation and competitor orientation rather than inter-functional coordination will lead to contractual governance, and contractual governance will affect radical innovation in a U-shaped way. (2) Inter-

functional coordination rather than customer orientation and competitor orientation will cause trust governance, and trust governance may boost both radical innovation and incremental innovation. These results suggest that firms committed to radical innovations should adopt strong contractual governance or trust governance in marketing alliance governance. Firms emphasizing on customer orientation and competitor orientation are likely to adopt strong contractual governance, while those focusing more on inter-functional coordination may adore trust. Furthermore, firms devoting themselves to incremental innovations only need to adopt strong trust governance, and incremental innovation suits those pursuing inter-functional coordination more.

Chapter 6, as the end of the thesis, draws the conclusion to the research and makes proper the discussion about the results. According to the statistic results, this study draws two conclusions: (1) Customer orientation and competitor orientation rather than inter-functional coordination will lead to contractual governance, and contractual governance will affect radical innovation in a U-shaped way. (2) Inter-functional coordination rather than customer orientation and competitor orientation will cause trust governance, and trust governance may boost both radical innovation and incremental innovation. Then, the next part of this chapter points out the contributions of this research that it sheds light on market orientation's indirect impact on innovation, and directs Chinese manufacturers' innovation practices. In the last, I figure out several future research directions which are remained to be explored.

1.4 Research findings and main arguments

This study has explored the relationships among market orientation, alliance governance, and innovation in marketing alliances formed by manufacturing firms and distributors in China. We have identified and tested the mediating role of alliance governance as a mechanism to explain the relationship between market orientation and innovation. Two conclusions are drawn from the results. (1) High levels of customer orientation and competitor orientation lead to increases in contractual governance, and contractual governance will affect radical innovation in a U-shaped way. Existing research only demonstrates the promoting effect of market orientation on alliance governance (Wang, Li and Xie, 2011; Liu, Zhao and Li, 2010), but does not explore the effects of the three dimensions of market orientation on alliance governance. This research goes further and finds more instructive results. In addition, Liu, Zhao and Li (2010) propose that contractual governance is a mediator in the link between market orientation and knowledge acquisition, but do not analyze the mediating effect of contractual governance in the relationship between market orientation and innovation further. This study analyses the specific effect of contractual governance on a particular type of innovation, i.e. radical innovation. (2) A high level of inter-functional coordination will increase trust governance, which then leads to an increase in both radical and incremental innovation.

This study, based on the comparison of different effects of dimensions of market orientation on alliance governance, further clarifies the positive role of trust governance on innovation, which confirms our result that alliance governance is a

mediating variable and the mechanism by which market orientation influences innovation. These results suggest that firms committed to radical innovations should adopt strong contractual governance or trust governance. Firms that focus on customer orientation and competitor orientation are likely to adopt strong contractual governance, while those focusing more on inter-functional coordination are more likely to develop trust-based governance. Firms that wish to develop incremental innovations only should adopt strong trust governance, and incremental innovation is also likely to result in those firms that actively pursue an inter-functional coordination.

1.5 Main contributions

My research's contributions may be both theoretical and practical. This research contributes to the literature in four significant ways. First, I contribute to the market orientation literature by enriching the studies on consequences of market orientation. There are a large number of outcome variables of market orientation in the existing market orientation research, such as firm performance, organizational learning, knowledge acquisition, corporate culture, corporate governance, etc.. however, there are very few studies exploring the effect of market orientation on alliance governance. According to Kohli and Wendy's (2007) study, compared to non-market-oriented enterprises, market-oriented enterprises will be different in all aspects of business decision making, so as to achieve the goal of a market-oriented enterprise. Moreover, the decision-making of alliance governance is critical for firms' performance in the process of cooperation with distributors. Thus, the impact of

market orientation on the distributor alliance governance has a very important theoretical significance.

Second, this research contributes to the innovation literature by finding meaningful antecedents of innovation. In business practice, most companies (especially manufacturers) attach great importance to innovation. This is because studies have found that innovative successful enterprises can significantly perform better than other non-innovative companies. This result has also been very much confirmed in the management literature. For example, Tylor, Sun, and Li (1998), based on data analysis of pharmaceutical companies in Indonesia, find that companies developing more types of new medicines have significant better firm performance than firms creating fewer types of new medicines. Hammor and Dali (2010) also find that the more the number of patents German companies acquired, the better performance they achieved. This conclusion is also supported by much economics literature. Therefore, what factors affect the company's innovation has become a very important issue in the academia. In this study, from the perspective of alliance governance, this paper proposes that alliance governance may be an important factor to affect firms' innovation. The results of this study also provided important support for the hypotheses. That is because studies have shown that a very important factor in deciding enterprises' innovation success is knowledge acquisition. The distributor alliance is a critical source of gaining access to external knowledge. By choosing governance mechanisms of the alliances, firms can determine their different knowledge acquisition and thus affect their own different way of innovation.

Third, I find out alliance governance as the middle mechanism between market orientation and innovation. This is my most important contribution to the literature in this study. This study follows the third stream of the research on the relationship between market orientation and innovation, and identifies a very important intermediate mediator in the market orientation-innovation chain: Alliance governance. It has been rare in the existing literature to recognize alliance governance as an intermediating mechanism in the relationship between market orientation and innovation. It has been the most to identify organizational learning as the mediating variable in the market orientation-innovation linkage. Of course, organizational learning plays an important role in the knowledge acquisition and innovation process. However, the organizational learning process is often a process which is difficult to control in the business. Different from organizational learning, distributor alliance governance is easier for companies to choose and control, and by doing so they can determine their own knowledge acquired, so as to promote innovation. Therefore, identifying the distributor alliance governance as a mediating mechanism in the relationship between market orientation and innovation has very important significance.

Fourth, the relationships among various dimensions of market orientation, alliance governance, and innovation are unfolded. This study not only proposes a complete theoretical framework of market orientation-alliance governance-innovation, but also enriches the theoretical framework by studying clearly the complex relationship among different dimensions of market-orientation, distributor alliance governance, and innovation. As a result, this study will fill in the research

gaps in the existing research. Most of the existing studies view market orientation, alliance governance, and innovation as single concepts, so the applicability of their research results is greatly limited. By analyzing market orientation, alliance governance, and innovation into different subdivisions, we have obtained the very clear relationship among customer orientation, competitor orientation, and inter-functional coordination, and contractual governance, trust governance, and the relationship among contractual governance, trust governance, and incremental innovation, radical innovation. This has further enriched the literature of market orientation theory, alliance governance literature, as well as the literature of innovation theory.

These empirical analyses provide help for better selection and management of innovation. These results show that the different types of technological innovation are influenced by the market orientation of the enterprises. Different market-oriented enterprises have different tendencies in the choice of innovation. In the process of managing innovation, the alliance governance mode for different innovation types is different, and different market-oriented enterprises emphasize on different types of alliance governance as well. In this way, it is shown that the different market orientations of the firms affect the way of corporate innovation and the management of innovation. From the empirical analysis, we further prove the necessity that we study innovation management from the perspective of different market orientation and alliance governance.

In terms of the different effect of market orientation on alliance governance, the results show that customer-oriented and competitor-oriented firms focus more

on the use of contract governance approach. As the customer-oriented and competitor-oriented enterprises pay more attention to the acquisition of external information and knowledge, and the contract management approach can provide the enterprise with better access to the market information through distributors that are closer to the market and consumers, and thus contract governance is frequently used by customer-oriented and Competitor-oriented enterprises. The results also show that there is a positive relationship between inter-functional coordination and trust governance. This is consistent with our hypothesis because such companies are more inclined to show partners in the cooperation with great trust. The results of these analyses show that under the transitional economy of China, customer-oriented and competitor-oriented enterprises need to use contract governance to innovate, and firms with high-level inter-functional coordination focus more on trust management in the way of innovation management.

From the perspective of alliance governance and innovation, the results show that trust governance has a strong effect on both radical innovation and incremental innovation, and there is a U-shaped relationship between contract governance and radical innovation. These results show that radical innovation requires the entire enterprise to manage and gather the entire enterprise's resources, capabilities, and the in-depth of cooperation with distributors to reduce risk because the investments in radical innovation are important and risky. Moreover, trust governance also helps enterprises' progressive improvements on the existing products and processes.

Furthermore, this study may contribute to the management practices. First, firms can choose their types of alliance governance according to their innovation goals. These results suggest that firms committed to radical innovations should adopt strong contractual governance or trust governance. Firms that focus on customer orientation and competitor orientation are likely to adopt strong contractual governance, while those focusing more on inter-functional coordination are more likely to develop trust-based governance. Firms that wish to develop incremental innovations only should adopt strong trust governance, and incremental innovation is also likely to result in those firms that actively pursue an inter-functional coordination.

In addition, managers may adjust their firms' market orientation when they want to achieve a specific type of innovations. Business managers can make decisions based on our findings. For example, when companies want to achieve incremental innovation, you can take more trust governance on their distributor alliance partners. And this kind of companies can invest more efforts in inter-functional coordination. When companies want to achieve more breakthrough innovations, if they are willing to take a formal contract governance on the distributor alliance partners, they should try to refine the terms of the contracts so as to make the contractual governance up to a high level. Such a path to achieve radical innovation is suitable for market-oriented enterprises with a high level of customer orientation or competitor orientation. Another path to achieve radical innovations which is suitable for market-oriented firms with a higher level of inter-functional

coordination is that firms take a high level of trust governance on their distributor alliance partners, and thus they can achieve radical innovations.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter aims to review and has a better understanding of theories and literature relevant to this research. It contains five parts. The first part of this chapter will review the theory and literature on market orientation. The second part of the chapter will then focus on a review of the theory and literature on innovation. This part will provide us with a better understanding of the definition and classifications of innovation. Furthermore, in the third part, works of literature on the relationship between market orientation and innovation is reviewed. In this part, import papers on this topic will be analyzed and help us find out the appropriate key research direction for this thesis. The fourth part exactly follows the third part and reviews the theory and literature on alliance governance. Finally, a conclusion pointing out the limitations of existing literature and further research directions is drawn at the end of the chapter.

2.2 Market orientation

2.2.1 Concept of market orientation

Market orientation is an evolving concept. Many researchers define market orientation from different perspectives (Kohli and Jaworski,1990; Narver and Slater,1990; Kohli, Jaworski and Kumar, 1993; Webster, 1988), among which most scholars call the implementation of marketing concept as marketing orientation, while some researchers name it market orientation (Webster, 1988), and some other research defines it merely as customer orientation (Deshpande, Farley and Webster, 1993). Shapiro (1988) considers that the concept of marketing orientation is too

narrow and easily misleading that people may think that handling market activities belong to marketing department alone. Rather, market orientation is not a selling concept limited to business sectors and marketing departments, but a general operating philosophy requiring the active involvement of every department. Shapiro (1988) emphasizes that a market-oriented organization has three characteristics:

- All important information, affecting the purchase of products, need to be sent directly to all sectors;
- Strategic and tactical decisions should be made through cross-sector and cross-firm communication;
- Constructive agreements will be created among departments or firms, and all departments make consistent commitments of supporting for the action plans.

Whereas Webster (1988) believes that market-oriented enterprises have the following five features:

- Senior executives must support customer-oriented values and beliefs;
- Strategic planning emphasizes market and customers;
- The firm aims to improve the abilities of marketing managers in order to enhance the development of marketing plans;
- The firm establishes a performance measure criterion based on market performance;
- All functions have a consistent commitment to customers.

Webster (1988) argues that a firm must establish and maintain close and long-term mutually beneficial relationship with customers in order to maximize its long-term performance. From the perspective of competitive advantage, market orientation is the most efficient and effective organizational culture to achieve this type of relationship.

Ames and Hlavacek (1989) point out that market-oriented management intends to understand customer needs, through introducing competitive products and services, and thus develop their capabilities and make efforts to reduce costs, and at last, integrate inter-functional efforts to achieve firm targets.

In the literature before 1990, we can find that there is not a clear definition of market orientation and that no scholars try to define it in a precisely measured way in order to assess the effect of the market orientation on firm operations. However, since 1990, there has emerged some studies which made precise definitions of market orientation and developed valid measures to calculate market orientation of a firm or a strategic business unit, among which Kohli and Jaworski (1990) and Narver and Slater (1990) were the representative papers.

Kohli and Jaworski (1990) propose that the term marketing orientation is not proper and suggest market orientation to better reflect the essence of this marketing concept. Their main reasons are:

- Marketing concept involves not only marketing functions but also other relevant departments;

- The term market orientation may avoid excessive expansion of the importance of marketing departments, and thus make marketing departments easier to coordinate and share responsibility with other departments;
- Market orientation means that the firm focuses its attention on the market, which including not just customers but other strength impacting the customers as well.

Kohli and Jaworski (1990) use the term "market orientation" to mean the implementation of the marketing concept. Accordingly, the market concept is a business philosophy (Barksdale and Darden, 1971; McNamara, 1972). Thus, market orientation in an organization is that its behaviors keep consistent with the business philosophy of marketing concept.

They propose the empirical view of market orientation and extract three core connotations:

- Customer focus-that is customer first;
- Coordinated marketing-that is, inter-functional integration and marketing tool integration;
- Profitability-namely pursuing maximize profit.

Kohli and Jaworski's (1990) findings, by in-depth interviews with 62 senior managers from four cities, confirm that customer focus is the core concept of market orientation and that customer first is not simply a commitment but you must understand customer needs and preferences. Considering that it is not that appropriate to determine what kind of product to be produced and sold depending on customers' feedbacks, they propose a broader strategic concept of market intelligence. It means that in addition to understanding the real customer needs, the

firm should predict the trends of changes in customer needs and analyze potential shocks from the market environment as well. Profit orientation is not a component of market orientation, but the result. Moreover, Kohli and Jaworski (1990) believe that market orientation contains the following three elements:

- The generation of market intelligence about customer current and future demands;
- The diffusion of market intelligence in the organization;
- The activities and reactions for market intelligence taken by the organization.

In full according to their understanding of market orientation, Kohli, Jaworski and Kumar (1993) develop a valid measure of market orientation, i.e., MARKOR. This scale focuses on activities actually practiced by an organization, rather than the organization philosophy.

Narver and Slater (1990) argue that a market orientation is the business culture which most effectively and efficiently creates superior value for customers. Narver and Slater (1990) find five relevant concepts after a literature review focusing on the concept of market orientation:

- Customer orientation: An organization fully understands the unique values of products in the views of customers, and has the ability to forecast possible changes in customer needs;
- Competitor orientation: An organization well knows strengths and weaknesses of competitors in the short term as well as their strategies and abilities in the long term;

- Inter-functional coordination: An organization is able to coordinate with other functions and thus use organizational resources to create values for customers;
- Long-term horizon: An organization adopts a long-term view on return from investments and business operations;
- Profit emphasis: Each function assesses its profit-oriented performance.

Narver and Slater (1990) make a breakthrough that market orientation contains three components, i.e., customer orientation, competitor orientation, inter-functional coordination.

Ruekert (1992) describes market orientation as that a firm gathers customer information, develops strategies to meet customer demands, and responds to customer needs by implementing the strategies. Deng and Dart (1994) consider market orientation as both a business philosophy and an action process that a firm collects market information about customer current and potential needs, meets these demands by capabilities better than competitors, integrates and disseminates the intelligences among different functions, and then reacts to market opportunities, and finally implement firm strategy by all functions together. Deshpande and Farley (1997) suggest another definition of market orientation: market orientation is the inter-functional processes and activities, which intend to create and satisfy customers through continuous demand assessments. Whitehall et al. (2003) deem market orientation as a worth-pursuing strategy that may lead to promotion of market performance. Moreover, the essential meaning of customer-led and market-oriented philosophy is discussed intensely in *Strategic Management Journal* (Connor, 1999; Slater and Narver, 1999).

From the various definitions and contents of market orientation above mentioned, it can be seen that despite the varied presentations, the focus of market orientation is always meeting customer needs, scouting competitors, and internal coordinating which creates values for customers.

2.2.2 Culture view

Culture view of market orientation is first put forward by Narver and Slater (1990). They deem market orientation as a type of organizational culture, and market orientation includes three behavioral elements, i.e., customer orientation, competitor orientation, and inter-functional coordination, and two decision criteria, namely long-term horizon and profit emphasis, as Figure 7 shows.

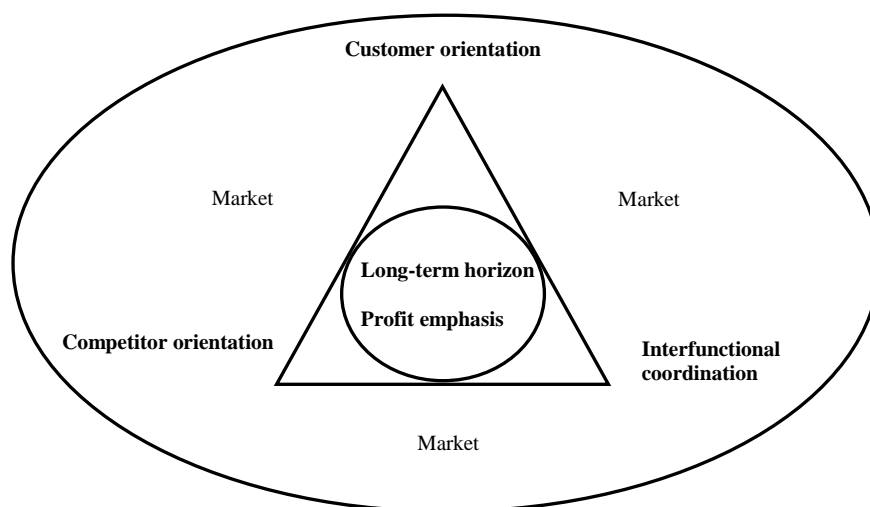


Figure 7 Framework of culture view of market orientation

Source: Narver and Slater (1990)

Culture plays a profound role in market orientation. Market orientation is not merely a kind of organizational behaviors. Instead, it is related to underlying organizational value systems. The closer the connections between culture and behaviors, the more powerful the value-creating activities derived from, reacted and

rooted in the culture of belief systems. Only such a strong organizational culture can produce sustained behaviors. Nevertheless, culture is something on the level of consciousness. It requires the adoption of specific behaviors to reflect. Therefore, culture view of market orientation demands the establishment of some certain behaviors, i.e., three behavioral elements (customer orientation, competitor orientation, and inter-functional coordination) proposed by Narver and Slater (1990). The basic assumption behind this view is that behaviors reflect culture.

Slater and Narver (1995) believe that market orientation is a type of organizational culture, a commitment by all employees to continuously create superior customer values. Deshpande and Farley (1997) propose an alternative definition of market orientation from the perspective of culture: Market orientation represents the inter-functional processes and activities which aim to create and satisfy customers by uninterrupted demand assessments. Such activities and processes are required to deeply rooted in the organizational culture. It is only creating superior customer values that form lasting behaviors of departments and employees and thus helps the firm put energy and resources altogether. In this view, the core value of market orientation is the commitments honored by all staff to create consistent excellent customer values. Based upon such perspective, the central principle of market orientation is that it should be recognized by all employees that every department and employee must contribute their skills and knowledge in the process of creating superior customer values. It becomes a rule only when an organization perceives this and nurtures market orientation as a type of culture. Thus, market orientation exerts four important characteristics:

- Value principle and propositions are very clear. That is to say, a market-oriented firm distinguishes its target market, positioning and business clearly.
- A market-oriented firm guides customers instead of just following them.
- The firm deems its business as a service no matter what it really is.
- Life cycle management is implemented for key customers and employees.

In the culture view of market orientation, because of the hierarchical characteristics of culture itself, market orientation carries multilevel features as well. Scholars in the field of organizational culture have conducted various studies on the complex levels of culture. Seain (1992) splits organizational culture into three levels: basic underlying assumptions, espoused values, and artifact. Triee and Beyer (1993) divide organizational culture into two parts, i.e., substance and concrete manifestation. Substance refers to the values and standards, while concrete manifestation indicates the actions.

Homburgetal (2000), based on the consolidated research of previous studies, argues that market orientation is composed of four levels:

- Common basic values supporting market orientation across the firm;
- Market-oriented criteria;
- Market-oriented regulations;
- Market-oriented behaviors.

Among these four levels of market orientation, common values are the most powerful support for market orientation. To maintain open culture such that market information is not controlled simply by marketing managers but distributed throughout the organization is a way to gain market orientation. Market-oriented

criteria lead the firm's market-oriented behaviors to found and conduct market orientation operations. The openness of inter-functional communications is linked with those on relevant market information. Market-oriented criteria are distinct from market-oriented values because market-oriented values stand for general principles whereas market-oriented criteria are used to direct firms' behaviors under specific environmental conditions.

Market-oriented regulations embody degrees of market orientation. Market-oriented regulations contain four aspects: story, arrangement, ritual, and language. The story refers to the exceptions of senior managers, including ideal customer-oriented behaviors of employees. The arrangement includes open and friendly customer interfaces. Ritual means regular incentives to market-oriented employees and special customer events. The language indicates the degree of market orientation in an organization.

2.2.3 Behavior view

Behavior view of market orientation focuses on specific behaviors associated with market orientation. Scholars holding this view consider market orientation as a set of specific corporate behaviors, which is some type of process or business portfolio to generate, distributing and reacting to market information. Firms interact with the market environment through these activities. According to Kohli and Jaworski (1990), behavior view of market orientation stresses on the understanding of current and potential customer needs and further makes it a premise to obtain sufficient resources and support for information-collecting and reacting activities.

Several behavior standpoints of market orientation emerge on the basis of behavior view of market orientation. These views illustrate crucial roles of firm behaviors in market orientation from static and dynamic continuous perspectives.

The first is knowledge view. In this view, the key to market orientation is the collection and use of market intelligence and reaction to it. To make an enterprise market-oriented, market intelligence must be collected and disseminated to the staff. According to Culnan (1983), besides scanning the market environment to obtain useful information, market orientation requires internal staff especially gatekeepers to share the information with other functions and colleagues.

The second is learning view. Rueket (1992) defines market orientation as firm activities in the following areas: obtaining and using customer information; implementing strategies to meet customer needs; reacting effectively to customer demands. Day (1993) deems market orientation as a multi-stage learning process, which includes research, information acquisition, information distribution, information interpretation, information utilization, and output evaluation. As suggested by Day (1993), two approaches to learning involved in the establishment of market orientation. The first, called programmatic approach, is associated with culture. Such type of learning may enhance employees' understanding in market orientation by a variety of training of principles, including teaching the nature and importance of market orientation, designing processes, methods, and techniques to create superior customer values. This approach is often used to attract, maintain and increase superior the status of target customers. The other is the experimental approach which means a firm learns experience in the activities of creating superior

customer values. In this process, the firm learns by doing and transforms business processes and structures in order to create superior customer values.

The last one is innovation view. This view is developed on the basis of learning view. According to Slater and Narver (1995), market orientation cannot promote firm performance unless combining it with organizational learning. Additionally, firms are required to meet customer needs by innovative products and services according to learning outcomes. The innovative capabilities will provide firms with advantages when they respond to chances and threatens. Han, Kim and Srivasava (1998) and Hurley and Hult (1995) offer strong support to this view. They find that innovation is one of the functions of market orientation, and their findings link organization innovation with market orientation and organizational learning theoretically.

In short, behaviors reflect culture, while the fundamental motivation of behaviors is culture. Thus, culture view and behavior view of market orientation are not conflicting. Deng and Dart (1994) consider market orientation as both a business philosophy and an action process that a firm collects market information about customer current and potential needs, meets these demands by capabilities better than competitors, integrates and disseminates the intelligences among different functions, and then reacts to market opportunities, and finally implement firm strategy by all functions together. Either a type of organizational culture or a set of behaviors just depends upon the emphasis we draw on.

2.3 Innovation

2.3.1 Definition of innovation

Austrian-American economist Joseph Schumpeter firstly puts forward innovation theory in his book titled *The Theory of Economic Development* in the year of 1912. Accordingly, innovation is the establishment of a new production function, namely to achieve a new combination of production factors. Schumpeter's (1912) concept of innovation includes the following five conditions:

- Creating a new product;
- Adopting a new method of production;
- Expanding to a new market;
- Acquiring or controlling a new supplying source of raw materials or semi-finished products;
- Achieving any kinds of new industrial organizing manners or firm restructuring.

Drucker (1985) determines a definition of innovation and makes an in-depth exploration of it. He believes that innovation is the new ability given to resources to create wealth. He argues that innovation can be trained and learned, and opposes that innovation is an inspiration. According to Drucker (1985), seven sources of innovation are:

- Unexpected events;
- Inconsistent conditions;
- Needs-based on programme;
- Sudden changes in industrial and market structure;
- Changes in population structure;

- Changes in cognition, emotion as well as sense;
- New knowledge, including scientific and non-scientific.

Therefore, innovation means the use of new knowledge to provide customers with new services and products. It includes both invention and commercialization. Many scholars try to explain innovation Drueker presents his views. Tushman and Nadler (1986) argue that innovation is the manufacturing of new products, services, or processes. Holt (1988) believes innovation is such a process that an organization creates or introduces something useful using knowledge or key information. Betz (1987) and Frankie (1990) both agree that innovation is to amend or invent a new concept to meet existing or potential demands and eventually achieve commercial purposes by improvement and development of the original functions. Gattiker (1990) believes that innovation is the products or processes formed by the efforts of individuals, groups, and organizations, which involve in creation and adoption of new knowledge and information. Damanpour (1991) considers innovation as a new product or service, a new technology, a new management system, and structure, or a new plan of organization members. Moreover, some researchers hold the view that innovation means a firm import an innovative product or process at the first time (Becker and Whister, 1967; Swanson, 1994; Newell and Swan, 1995). Nonaka and Takeuchi (1995) treat innovation as the spiral operation of knowledge that results from the interactions of tacit knowledge and explicit knowledge in an organization. Afuah (1998) proposes a framework of innovation sources to explain where innovation comes from, as Figure 8 shown.

- 1) internal value chain functions within the firm;

- 2) suppliers, customers, and complementary innovators in the external value chains;
- 3) universities, governments, and private laboratories;
- 4) competitors and related industries;
- 5) other countries or regions.

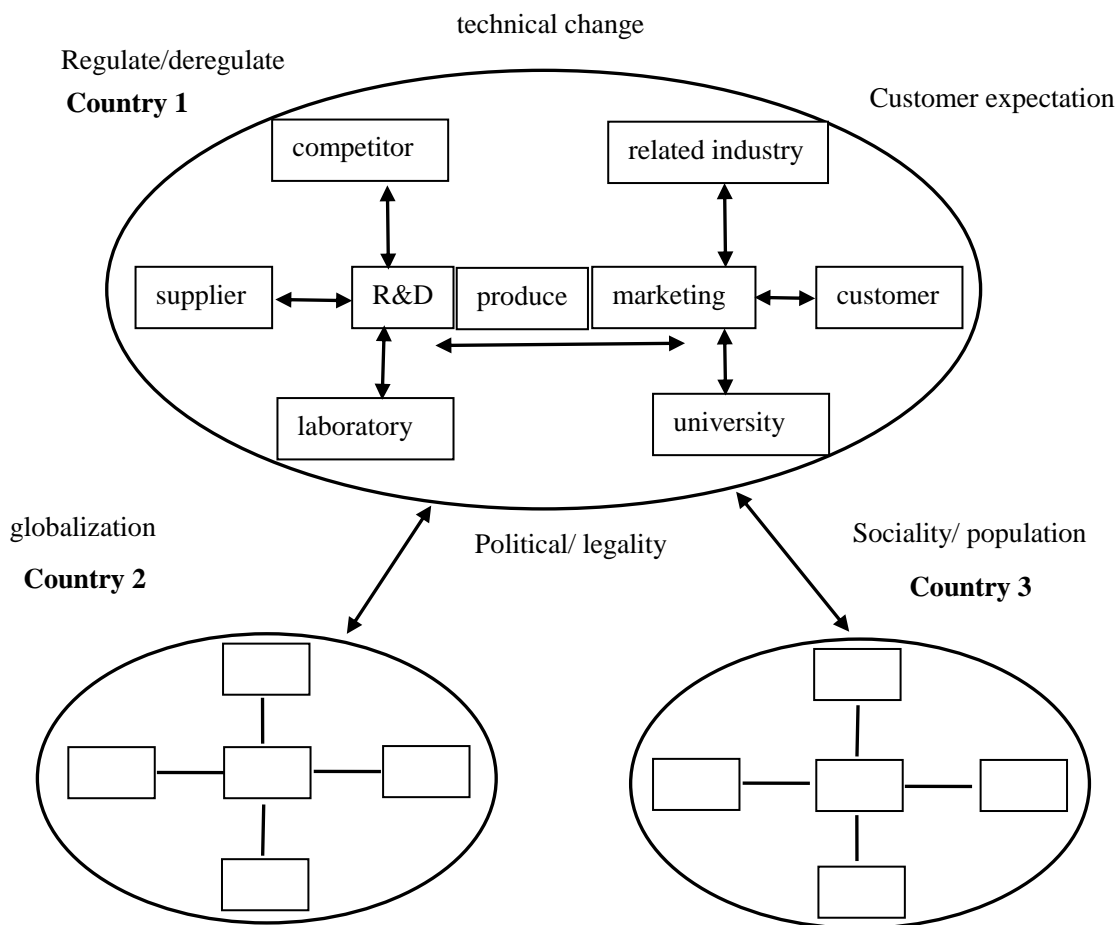


Figure 8 Functional source of innovation

Source: Afuah (1998)

There are some other typical views of innovation. American economist E. Mansfield views that innovation is the first application of an invention. And British scholar Vmobr considers that innovation is the founding, evolution and developing

the process of technological artifacts. British economist P. Stoneman believes that innovation is the process of first development of scientific inventions or research and then creating profits by sales. Organization for Economic Cooperation and Development (OECD) defines innovation as to make an idea to become a salable product in industrial or commercial activities. Research Department of Library of Congress defines that innovation is a complete process of commercializing new products or technologies, including a series events of idea generation, research and development, commercialized production, and proliferation. The American Association of Industrial Research recognizes that innovation is a complete process of admitting new needs, identifying new solutions, developing an economically viable industrial product and service, and finally getting success in the market.

To sum up the above definitions of innovation, various scholars define innovation at different ranges. In this study, we use a narrow definition of innovation, i.e., innovation is the transformation of a market opportunity and a set of assumptions about technology into a product available in the market (Krishnan and Ulrich, 2001).

2.3.2 Classifications of innovation

The field of innovation is very broad that it can be studied from many different perspectives. To demonstrate innovative behaviors and determinants of innovation, prior scholars classify innovation into different categories. Table 1 shows some representative classifications of innovation.

Table 1 Classifications of innovation

Studies	Journal	Classifications
Knight (1967)	Journal of Business	Product or service innovations Production-process innovations Organizational-structure innovations People innovation
Daft (1978)	Academy of Management Journal	Administrative innovations Technical innovations
Marquis (1969)	Innovation	Incremental innovation Systems innovation Radical innovation
Ettlie, Bridges and O'keefe (1984)	Management Journal	Radical innovations Incremental innovations
Dewar and Dutton (1986)	Management Science	Radical innovations Incremental innovations
Damanpour (1998)	Communication Research	Administrative innovations Technical innovations
Nord and Tucker (1987)	Lexington books	Radical innovations Incremental innovations
Chacke (1988)	Innovation	Product innovation Process innovation Organizational innovation
Henderson and Clark (1990)	Administrative Science Quarterly	Radical innovations Architecture innovation Component innovation Incremental innovations
Higgins (1995)	Strategy & Leadership	Product innovation Process innovation Marketing innovation Management innovation

Schumann et al. (1994) propose an innovation matrix (as Figure 9 shows) to identify organizational innovation by cross-classification of nature and class of innovation.

According to nature of innovation, innovation can be classified into 3 categories: (1) product innovation, which means an organization provides customers with complete products or services with specific functions; (2) process innovation,

which means offering a process or method of product development and manufacturing; (3) procedure innovation, which means integrating products or processes into organizational operation.

Accordingly, innovation can be classified into 3 categories by class of innovation: (1) incremental innovation: making existing products or processes further improved, easier to use or cheaper to buy; (2) distinctive innovation: significantly improving functions of existing products, processes or procedures; (3) breakthrough innovation: making fundamental differences in technology or method and making new functions perform obviously superior to or even completely replace traditional functions.

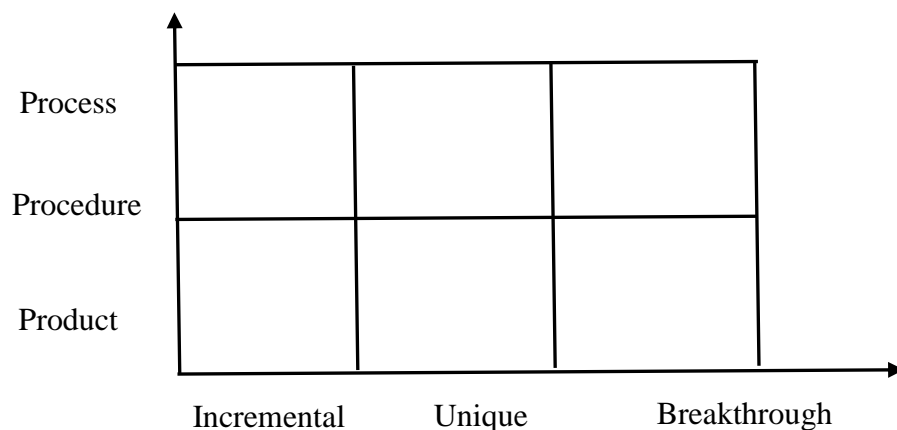


Figure 9 Practical innovation matrix

Source: Schumann (1994)

2.4 Literature on MO-INNO relationship

Substantial interest in the effect of market orientation on innovation has shown in recent 20 years (Kohli and Jaworski, 1990; Narver and Slater, 1990; Slater and Narver, 1995; Im and Workman, 2004; Zhou, Yim and Tse, 2005; Morgan,

Vorhies and Mason, 2009). Market orientation is viewed as a set of activities which reflect a firm's degree of adoption of the marketing concept philosophy. Based on abundant field interviews, Kohli and Jaworski (1990) classify the activities into three categories: (1) collecting market information, (2) disseminating the information, and (3) responding to such information. Since market orientation responds to customer demands, it is viewed as a prerequisite for firms to design competitive products and services and hence promote their performance. For this reason, the effect of market orientation on innovation has always been the central theme in the literature involving market orientation (Slater and Narver, 1999; Hult, Ketchen and Slater, 2005; Connor, 2007).

In the early stage of studies in this domain, little research explores the effect of market orientation on innovation because of invalid measure of innovation. Scholars take the number of patents as a measure of innovation for extensive research.

Gradually, researchers find that this approach to measure cannot meet the need of studies on MO-INNO relationship. Im and Workman (2004) measure new product success in two dimensions: NP novelty and NP meaningfulness and examine the influence of market orientation on NP success. This measure of product innovation is concrete and makes research easy-to-operate. In recent years, innovation is measured by types of breakthrough innovation (Zhou, Yim and Tse, 2005).

Accordingly, the breakthrough is categorized into two types: tech- and market-based innovation. All these different measures of innovation push forward the research in this field. What is distinct in them is that they view innovation from various points of view.

The relationship between market orientation and innovation has been widely discussed. Nevertheless, it is a controversial topic. Some scholars suggested that market orientation boosted successful innovations and hence promoted firm performance (Kohli and Jaworski, 1990; Slater and Narver, 1994; Hurley and Hult, 1998). On the contrary, based on evidence of the case and empirical studies, other researchers argued that market orientation negatively affected innovation because it led firms to produce uncompetitive me-too products (similar to products of competitors) rather than real innovations (new-to-the-world products, Bennett and Cooper, 1981; Lukas, 2000). In order to quell the debates, many researchers sought to hold a contingent view of the MO-INNO relationship. They paid a lot of efforts to identify under which circumstances market orientation facilitated or impeded innovation (Hurley and Hult, 1998; Im and Workman, 2004; Zhou et al., 2005).

Essentially, I document the literature on the effect of market orientation on innovation in top management journals. 81 relevant articles are searched and 25 highly related papers are screened to review. Table 1 shows the 25 important papers on MO-INNO relationship in the period of 1997-2016.

Table 1 Important papers on MO-INNO relationship, 1997-2016

	SMJ (N=4)	JM (N=4)	Mgmt. S (N=5)	AMJ/IBR/IMM/JAMS /JBR/JIBS/JMR/MIR/ OS (N=12)
1997			Burchill & Fine	Gatignon and Xuereb
1998		Hurley & Hult		Witt
2000			Atuahene-Gima & Evangelista	
2001			Krishnan & Ulrich	Atuahene-Gima & Ko
2002	Robinson & Chiang		Lilien et al.	
2003	Dobni & Luffman			
2004		Im & Workman	Shane & Ulrich	
2005		Zhou, Yim & Tse		
2007				Zhou et al.
2008	Zhou et al.			
2009	Morgan et al.			
2010				Naidoo; Nasution et al.
2012				Boso et al.; Feng et al.
2013				Wang and Chung
2015				Nguyen et al.
2016		Chang and Tylor		Cui and Wu; Najafi-Tavani et al.

Total N=25 articles from these 12 top-tier journals that publish articles on MO-INNO relationship.

In Table 2, the research questions, method, and results of these papers are presented. It is apparent that scholars have switched their attention from the simple effect of market orientation on innovation to the contingency and influence mechanism of the MO-INNO relationship.

Table 2 Research questions and results of important literature on MO-INNO relationship*

<i>Reference</i>	<i>Method</i>	<i>Research questions</i>	<i>Results</i>
1) Burchill & Fine (1997)	Inductive systems diagrams	What are the product development process and time-to-market dynamics?	They introduce a product development process, develop a theory of product development and a new methodology.
2) Gatignon & Xuereb (1997)	Questionnaire , OLS	Which of three different strategic orientation of the firm (customer, competitive, and technological) is more appropriate, when, and why it is so in the context of developing product innovations?	They find out: (1) A firm to develop a competitive product has a strong technological orientation; (2) A competitive orientation in high-growth markets is useful; (3) Firms should be consumer- and technology-oriented in highly uncertain markets, while competitor-oriented in lowly uncertain markets.
3) Hurley & Hult (1998)	Questionnaire , multiple regression	What is the relationship between organizational culture (including market and learning orientation) and innovation?	They review the overlap between research on market and learning orientations and studies of the innovation, and present a framework clarifying the relationship between market and learning orientations and organizational innovativeness.
4) Witt (1998)	Theoretical research	Which strategies of technical innovation can be pursued in Eastern European firms? Which typical problems may occur?	He develops a conceptual framework for strategies of technical innovation in times of economic transformation.
5) Atuahene-Gima & Evangelista (2000)	Questionnaire , moderated regression	What are the antecedents and outcomes of cross-functional influence in the marketing-R&D relationship?	They find out that marketing's and R&D's self-reported influence and their influence as reported by the other have a differential impact on new product performance.
6) Krishnan & Ulrich (2001)	Inductive	How does the research like in product development decisions?	They convey the shape of the entire research landscape.
7) Atuahene-Gima & Ko (2001)	Questionnaire , MANOVA	(1)Does new product performance vary with different combinations of market and entrepreneurship	They find out that the impact of the alignment between market and entrepreneurship orientations on product innovation activity and performance. Their findings suggest

		orientations? (2) are there significant differences associated with different market and entrepreneurship orientation combinations?	that ME firms have higher new product performance, and are more effective in the product innovation process in several respects than EO, MO, and CO firms. The differences among the four groups of firms are not artifacts of the environment.
8) Robinson & Chiang (2002)	Questionnaire , conservative two-tailed tests	Do market pioneers, early followers, and late entrants maintain different product development strategies?	They claim that market pioneers have the highest probability of engaging in product development and tend to emphasize minor projects. Whereas late entrants are the other way around.
9) Lilien et al. (2002)	Quasi-experiment, cross-section analysis	Whether LU projects develop concepts for new products that are more valuable? What is the difference between the effectiveness of the LU procedure and non-LU procedure?	Each funded LU project is projected to create a new major product line. LU project ideas are projecting their highest rate of major product line generation.
10) Dobni & Luffman (2003)	Theoretical research	What are the ideal behavioral profiles for organizations seeking to maximize performance by considering the scope and impact of market orientation on strategy implementation?	Proposition: There is a palpable relationship between behaviors, actions, and outcomes with respect to competitive context. Specifically, the degree of adherence to the specific requirements of the environment in market orientation and strategy profiles will be significantly related to performance.
11) Im & Workman (2004)	Questionnaire , SEM	Whether market orientation facilitates or inhibits creativity? Whether creativity influences NP performance? How to define and measure creativity in the NP development and launch contexts?	They find out that NP and MP creativity mediates the relationship between market orientation and NP success. The meaningfulness dimension, rather than the novelty dimension, of creativity is of greater importance in explaining the link between market orientation and NP success.
12) Shane & Ulrich (2004)	Overview	What has been studied in the domain of technological innovation, product development, and	They present brief summaries of 250 articles in the domain.

		entrepreneurship in Management Science?	
13) Zhou, Yim & Tse (2005)	Questionnaire , SEM	Does market orientation impede breakthrough innovation?	They find out that a market orientation facilitates technology-based innovations but inhibits market-based innovations. A technology orientation is beneficial to technology-based innovations but has no impact on market-based innovations, and an entrepreneurial orientation facilitates both types of breakthroughs. Different market forces exert significant influence on technology- and market-based innovations, and these two types of innovations affect firm performance differently.
14) Zhou et al. (2007)	Questionnaire , SEM	Should companies adjust their orientations toward customers or toward competitors in global markets?	The results indicate that a customer orientation works better in economically developed markets, as well as in markets with good local business conditions, greater resource availability, and demanding customers. A competitor orientation is more effective in markets that are economically developing, have poor local business conditions, and face resource scarcity.
15) Zhou et al. (2008)	Questionnaire , SEM	What are the processes by which market orientation affects performance?	MO behavior fully mediates the effects of MO culture on employee satisfaction, product quality, and organizational performance. Leadership quality strengthens the effect of MO culture on unit-level MO behavior. MO behavior enhances firm performance indirectly through employee job satisfaction and product quality.
(16) Morgan, Vorhies and Mason (2009)	Questionnaire , SEM	What are the impacts of MO and marketing capabilities on firm performance?	Their findings indicate that MO and market capabilities are complementary assets contributing to superior firm performance.
(17) Naidoo (2010)	Theoretical research	Whether marketing innovation can assist in withstanding the	Marketing innovation capabilities improved when manufacturing SMEs

		challenges of operating under the economic crisis?	were competitor-oriented and had good inter-functional capabilities.
(18) Nasution et al. (2011)	Questionnaire , SEM	What is the direct effect of entrepreneurship and business orientations, and the interaction effect of them on innovation and customer value?	Entrepreneurship and human resource management are the most significant drivers of innovation and customer value. The interaction of entrepreneurship and integrated MO has significant impact on innovation and customer value.
(19) Boso et al. (2012)	Questionnaire	What is the joint impact of entrepreneurship and MOs on export new product performance?	Seeking complementarity between entrepreneurial-oriented and market-oriented behaviors is a useful strategy for export new product success.
(20) Feng et al. (2012)	Questionnaire	Does IT implementation complement customer orientation?	Customer focus, customer involvement and communication with customers have significant negative effects on time-to-market new products. IT implementation plays a role of complementary asset to customer involvement.
(21) Wang and Chung (2013)	Questionnaire	What is the moderating effect of managerial ties on the relationship between market orientation and innovation?	Customer orientation and interfunctional coordination have a positive impact on innovation. Business ties enhance the relation between customer orientation and interfunctional coordination and innovation. Business ties and competitor orientation have a negative interaction effect on innovation. Political ties also dampen the relation between interfunctional coordination and innovation.
(22) Nguyen et al. (2015)	Questionnaire	What is the relationship among knowledge acquisition from social media, MO, social media strategic capability, and brand innovation strategy?	Brand innovation is affected by both knowledge acquisition from social media and MO.
(23) Chang and Taylor (2016)	Meta-analysis	What is the relationship between customer participation and NPD?	Involving customers in NPD process improves new product financial performance directly and indirectly.
(24) Cui and Wu (2016)	Questionnaire	What are the different drivers of customer	Three forms of customer involvement in innovation are driven by different

		involvement in innovation?	factors, and the impact of customer involvement on product performance is contingent on technological capability.
(25) Najafi-Tavani et al. (2016)	Questionnaire	Does absorptive capacity moderate the relationship between MO and NPD performance?	Absorptive capacity positively moderates the relationship between MO and new product performance.

*Literature is sorted by year of publication.

By in-depth analysis of the literature, the research is thought to be classified into four streams. The first stream holds an opinion that market orientation has a direct effect, positive or negative, on innovation (Gatignon and Xuereb, 1997). Then, because disagree with this idea, the second stream appears. They argue that effect of market orientation on innovation is not direct but via other mediators (Zhou, Yim and Tse, 2005). With the research on this topic goes forward, many researchers argue that the effect of market orientation on innovation is not categorical and hold a contingent view of the MO-INNO relationship (Li and Atuahene-Gima, 2001). These studies are identified as the third stream. The last stream deepens the research on the base of other streams. They claim that the three dimensions of market orientation (customer orientation, competitor orientation, inter-functional coordination) have the different impact on innovation. Especially, they demonstrate the different effects of customer orientation and competitor orientation on innovation (Atuahene-Gima and Ko, 2001; Zhou et al., 2007). These four streams are not isolated but substitute or complement for each other.

2.4.1 Direct effect stream

Researchers holding an opinion of the direct effect of market orientation on innovation diverge into two genres also. Some scholars claim that market orientation has a positive effect on innovation, while the others deem that the effect of market orientation on innovation is negative.

(1) Positive effect of MO on innovation

Numerous studies have provided theoretical and empirical evidence for the positive association between market orientation and firm performance (e.g., Narver and Slater, 1990; Jaworski and Kohli, 1993; Slater and Narver, 1994; Matsuno, Mentzer, and Özsomer, 2002). Many studies have further emphasized the important role of innovation in boosting market orientation-performance relationship (Han, Kim, and Srivastava, 1998; Hurley and Hult, 1998). Some scholars support a positive impact of market orientation on innovation (Narver and Slater, 1993; Jaworski and Kohli, 1990). Their explanation for these results is that market orientation essentially involves making new things in response to the market conditions so that market orientation can be viewed as a form of innovative behavior (Jaworski and Kohli, 1993). Moreover, Naidoo (2010) finds that MO can help SMEs promote innovation capabilities under economic crisis.

(2) Negative effect of MO on innovation

More scholars hold the opinion that market orientation has a negative effect on innovation (Christensen and Bower, 1996; Voss and Voss, 2000) and critic market

orientation as a chief culprit to make leading firms lose competitive advantages (Christensen, 1997). Because market orientation emphasizes too much on current customers and competitors, but current customers have difficulties in articulating their true potential needs (MacDonald, 1995; Hippel, 1988), so the firms can only perform reactive to the expressed but not the latent needs of customers (Bennett and Cooper, 1979; Christensen and Bower, 1996). Christensen (1997) in his book titled *The Innovator's Dilemma* argues that listening to customers rather than sustaining technologies is likely to harm disruptive innovation. But Narver and Slater (1998) point out that this conclusion results from the confusion of two concepts: customer-led and market-oriented. The former focus on customers' expressed needs and is reactive in nature, but market-oriented is proactive and satisfies the latent needs of customers (Narver and Slater, 1998). Even so, Voss and Voss (2000) find that customer orientation negatively influences firm performance in professional theaters because of lack of breakthrough innovations. According to Zhou, Yim and Tse (2005), ignoring the customers is the best choice for a firm which pursues breakthrough innovations.

This stream of research lays the foundation for my research. By reviewing the literature of this stream, I was convinced of the relationship between market orientation and innovation. However, this stream of literature ignored the black box between market orientation and innovation. And based upon these studies, I started to think about the missing link, which is my main research question.

2.4.2 Mediate stream

Being different from the stream I stated above, a few scholars argue that market orientation has an indirect effect on innovation. They find several types of mediators to depict this kind of indirect influence mechanism, i.e., organization learning, knowledge, creativity.

Slater and Narver (1995) indicate that organization learning mediates the relationship between market orientation and new product success. In consist of this research, Zhou, Yim and Tse (2005) find that organizational learning plays a role as mediator in the market orientation-breakthrough innovations association. Besides, like this logic, many researchers argue that knowledge is a mediator in MO-INNO relationship (Chang and Taylor, 2016; Slater and Narver, 1995; Nguyen et al., 2015). Following Day and Wensley's (1988) source-position-performance framework, Im and Workman (2004) test the mediating effect of NP creativity on the relationship between customer orientation and NP meaningfulness and get empirical supports. These findings of mediators contribute greatly in understanding the influence mechanism of market orientation on innovation.

This stream gives me many directions to build up my conceptual model, given that my research question is what is the missing link between market orientation and innovation. Finally, the argument that knowledge may be a mediator in the relationship between market orientation and innovation (Chang and Taylor, 2016; Slater and Narver, 1995; Nguyen et al., 2015), along with my management

practices, reminded me to focus on alliance governance, which may be a middle mechanism between market orientation and innovation.

2.4.3 Moderate stream

With respect to the divergent results of MO-INNO relationship, researchers seek to determine under which circumstances market orientation will facilitate or impede innovation. In the process of ascertaining moderators, three views outstand organization culture view, environment view, and strategy orientation view. These contingent standpoints support a further standing in MO-INNO relationship.

(1) Organization culture view

Most scholars use Slater and Narver's (1990) definition that a market orientation is a part of organizational culture. They argue that it is not only market orientation but also other organization culture that contribute to innovation together. Hurley and Hult (1998) suggest that learning orientation which combined with market orientation will affect the innovation orientation and then achieve innovations. This point of view involves learning orientation and considers it as an antecedent to innovation. As Hurley and Hult (1998) suggesting, market orientation cannot have a positive effect on innovation without applied learning. Neglecting the interaction of market orientation and learning orientation on innovation is false because it does exist.

(2) Environment view

Researchers holding an environment view suggest that environment will moderate the MO-INNO relationship. They suggest that market growth,

environmental factors will moderate the influence of market orientations on product innovations (Athahene-Gima and Ko, 2001; Gatignon and Xuereb, 1997). Some scholars suggest that environment should be a moderator in the MO-INNO relationship but only to find that competitive environment has little influence on the market orientation-performance relationship (Narver and Slater, 1994; Jaworski and Kohli, 1992). Oppositely, Lukas (2000) indicates that environment, especially market and technological turbulence, moderates the relationship between MO and innovation. Furthermore, Grewal and Tansuhaj (2001) find that market orientation is detrimental to innovation after an economic crisis, which they attribute to the lack of foresight of market-oriented firms.

(3) Strategy orientation view

As commonly accepted, market orientation, technology orientation, and entrepreneurship orientation are viewed as three dimensions of strategic orientation. Naturally, researchers prospect to prove the interacting effects of these three dimensions on innovation. Hult and Ketchen (2001) suggest that the potential value of market orientation on innovation should be considered together with entrepreneurship orientation (Boso et al., 2012; Nasution et al., 2011). Matsuno, Mentzer, and Özsomer (2002) also find that entrepreneurship orientation interacting with market orientation positively affects innovation. Inconsistent with this logic, Athahene-Gima and Ko (2001) develop a framework aligning market orientation with entrepreneurship orientation and test the effect of the alignment on product innovation. Their findings show that the alignment of the two orientations has a

more significantly positive impact on product innovation than each orientation separately. In recent studies, researchers shift their attention to product innovation strategy. Zhou, Yim and Tse (2005) find that a market orientation facilitates technology-based innovations but inhibits market-based innovations. This indicates that market orientation plays different roles in technology- and market-based innovation processes. In addition, Wang and Chung (2013) find that business ties enhance the relation between customer orientation and interfunctional coordination and innovation while business ties and competitor orientation have a negative interaction effect on innovation. Moreover, political ties dampen the relation between interfunctional coordination and innovation (Wang and Chung, 2013).

2.4.4 Multidimensional stream

Market orientation includes three dimensions: customer orientation, competitor orientation, inter-functional coordination (Narver and Slater, 1990; Day, 1994). Many scholars articulate that the divergence of effect of market orientation on innovation is due to the different impacts of these three dimensions of market orientation on innovation. It will not be misled only when we consider the effects of these three dimensions on innovation respectively. Specially, researchers focus on the different effects of customer and competitor orientation on innovation.

In terms of firms' innovative behaviors, customer orientation can be defined as the will and capability to identify, analyze, understand, and answer customers' needs (Gatignon and Xuereb, 1997). And competitor orientation can be defined as the will and capability to identify, analyze, and respond to competitors' actions (Narver and Slater, 1990). Customer orientation focuses on customers' needs and

competitor orientation on competitors' actions. Different focal points will bring divergent impacts on innovation. Gatignon and Xuereb (1997) demonstrate that competitor orientation boosts innovation in high-growth and lowly uncertain markets, while customer orientation facilitates innovation in highly uncertain markets. Paying attention to the association between dimensions of market orientation and categories of innovations, Lukas (2000) finds that customer orientation contributes to the launching of new-to-the-world products but decreases the introduction of me-too products, while competitor orientation positively affects the performance of me-too products. More generally, Frambach, Prabhu and Verhallen (2003) find that customer orientation positively impacts new product activity while competitor orientation negatively influences. Recently, Im and Workman's (2004) finding shows that customer orientation has a positive impact on NP meaningfulness but no significant influence on NP novelty. Competitor orientation enhances NP novelty but not NP meaningfulness. The numerous empirical pieces of evidence show that customer and competitor orientations play so distinct roles on innovation that it is meaningful to consider them separately in studies.

This stream gives me the opportunity to deepen this research. Given that market orientation, alliance governance, and innovation include divergent dimensions that differ both theoretically and practically, exploring different middle channels among them will make more contributions to the literature and also to the practice.

2.5 Alliance governance

2.5.1 Theoretical foundations

In alliances, uncertainty requires partners to govern numerous contingencies, including the quality of partner resource contributions and the control of know-how (Oxley, 1997; Santoro and McGill, 2005). Alliance governance refers to the combinations of legal and social control mechanisms which coordinate and safeguard the alliance partners' resource contribution, and define their administrative responsibilities and the division of rewards from their joint activities (de Man and Roijakkers, 2009). Several theoretical perspectives have examined alliance governance, including social exchange theory (Blau, 1964), transaction cost economics (TCE, Williamson, 1991), resource-based view (RBV, Zollo, Reuer, and Singh, 2002), and real options (Kogut, 1991). There are a large number of analyses on the transaction in the literature. The common features of the literature are that abstracting the transactors into economic men with the speculative tendency, and highlighting on preventing speculative risks and, how to design legal contracts to improve transaction efficiency when discussing governance issues. However, social factors among transactors can never be ignored when we view an alliance as a collection of transactions with a certain time span. Many scholars, including Galaskiewicz (1985), Granovetter (1985), McGuire (1988), Uzzi (1997), and Das and Teng (1998), try to apply sociological theories and methods to analyze cooperations among organizations comprehensively. Among them, social exchange theory is

emphasized and achieves fruitful research findings in the studies (Das and Teng, 2002; Nooteboom et al., 1997).

(1) Social exchange theory

In the classic papers on social exchange theory, Blau (1964) defines social exchange as spontaneous personal behaviors resulting from both expected payments and actual earnings. Conceptually, social transactions obviously differ from pure economic transactions in the following aspects:

First, in terms of the nature of transactions, social transactions are strongly spontaneous and therefore informal and uncertain, while pure economic transactions are strictly based on contracts prepared in advance between transactors. This feature determines the big difference in governance and control of social and economic transactions.

Second, considering the process of the transaction, pure economic transactions are usually abstracted to finished instantaneously at a time point that process of the transaction is not considered (Zajac and Olsen, 1993). Social transactions often describe that a transactor firstly behaves beneficial to the other and then the other transactor makes appropriate responses based on this. So social transactions must be discussed under a longer time span (Das and Teng, 2002).

Third, respect to the values produced from transactions, pure economic transactions generate extrinsic and objective values. Oppositely, social transactions result in intrinsic and subjective values because social transactions often don't

involve in objective economic interests but come from transaction process

(Nooteboom et al., 1997).

Social exchange theory emerges in the 1950s. Early research on the theory focuses on analyzing characteristics and practical significances of transactions. In this period, some representative scholars contributed to the theory, including Blau, Emerson and Homans, etc.. Social exchange theory considers that scarcity of resources induces social transactions among people. Compared with pure economic transactions, social transactions can exchange scarce social resources which is difficult to finish through market mechanisms. Different from the assumption of transaction cost theory that transactors have speculative tendencies and equal status, social exchange theory stresses on effects of trust and asymmetric dependence between transactors on the transactions. In the analytic framework of social exchange theory, trust is an effective way to integrate social contacts of transactors into related research. In recent years, more and more scholars began to emphasize the important role of trust in alliance cooperations (Gulati, 1995; Nooteboom et al., 1997; Ring and Van de Ven, 1992, 1994; Zaheer et al., 1998).

Another element social exchange theory draws emphasis on is the asymmetric dependence between transactors. Emerson (1962) notes that A depends on B when A needs resources of B, and thus B has a power to affect behaviors of A to a certain extent. In an actual social transaction, dependencies between A and B must be mutual, but B will have a relatively greater power in the transaction between A and B if A's dependence on B is greater than B's dependence on A. Pfeffer and Salancik

(1978) extend the concepts of power dependence in social exchange theory into the studies of inter-organizational relationship, and combine it with resource-based view and then form and develop resource dependence theory which is more suitable for analysis of strategic alliances (Barringer and Harrison, 2000). The key point of resource dependence theory is that proper management dependent relationship caused by resource dependence between organizations will further reduce uncertainty and risks in cooperations.

The initial goal of social exchange theory is to demonstrate that transactions between individuals are not pure economic issues and to explore impacts of social contacts on transactions between individuals. However, the theory has been applied in the field of organization research at present. For an instance, Westphal and Zajac (1997) analyze the constitutes of company's board from the perspective of social exchange theory. In the areas of organizational cooperation and strategic alliance, social exchange theory draws increasing attention and views strategic alliances as special transactions with both economic and social attributes. In order to apply social exchange theory in analyzing issues on alliance governance, it is necessary to analyze and explain the social transaction attributes of alliances.

(2) Social exchange perspectives of distributor alliance

Distributor alliances, as a type of strategic alliances, have obvious social transaction attributes because of the following reasons.

First, distributor alliances are the interfirm partnership under a certain duration, rather than single transaction activities with clear contents. Therefore, most of the alliance contracts are incomplete, and there is no (and cannot be) complete list of all possible conditions and countermeasures in the cooperations by signing contracts. Contracts of alliances usually consider only key points and remain other issues to be determined by negotiations in the process of cooperations. Moreover, some important features of alliances, such as bilateral cooperators' mutual beneficial behaviors, joint problem solving and adequate information exchanges, are often not able to be specified by the terms of contracts (Uzzi, 1997). Consider these characteristics, Macneil (1980) uses the so-called concept "relational contract" to describe specificity of alliance contracts and to reflect that strategic alliances have a very clear feature of social transaction.

Second, cooperative behaviors of strategic alliances are processes of a sequential game. Cooperations can be continued only when one party of alliance affirms the other's cooperative behaviors and response to it with cooperative actions. Since that the entire contents of cooperations are not possible to be finished at a time point, one cooperator can observe the other's cooperative behaviors and thus make appropriate adjustments. Jap et al.'s (2000) empirical research on supply-distribution relationship shows that both parties of alliance participants will consider more on completeness of cooperation contracts when alliances are near to the end, while they will emphasize on the importance of relational contracts when their cooperations are in the period of maturity and growth. The reason for this difference lies in alliance

participants' expectations. When they expect to cooperate in a relatively long duration of time, they still have room to take responding actions once speculative behaviors occur, but it is difficult for them to react to speculative behaviors when their cooperation towards the end. Therefore, for strategic alliances with a certain time period, the members of alliances can lead to more in-depth cooperations only when they behave cooperatively. The mutually beneficial behaviors are the salient features of social transactions.

Third, social contacts and trust of alliance members cannot be ignored in strategic alliances. Although implications of trust and economic values of the relationship between alliance members are difficult to measure, these two factors are crucial to the success of alliances. Nevertheless, the establishment of long-term trust is usually the basis of satisfactory economic values from strategic alliances (Zaheer et al., 1998). Dyer's (1997) study for Japanese automobile manufacturers' alliances finds that Japanese automobile suppliers do not calculate strictly supplying prices according to their costs and profits every time with the manufacturers, but weigh their gains and losses from the perspective of long-term transactions. As a Japanese supplier describe if the purchase price claimed by a manufacturer cannot guarantee the expected profits of a supplier for some reason this time, the supplier will still supply according to the requirements and the manufacturer will pay a higher price in the next transaction to compensate for the loss of the supplier. This mechanism is the key factor affecting that Japanese automobile industry gains strong competitive competences. Therefore, it is critical to the success of strategic alliances that alliance

members make breakthroughs in assessing their pros and cons from the perspective of long-term cooperations rather than single transactions. Similarly, social transactions may not involve in certain economic benefits, and contrary to this, establishing and maintaining long-term relationship has a higher priority. This common feature proves that strategic alliances have social transaction attributes.

Based on the above four reasons, we can draw a conclusion that strategic alliance should be viewed as a transaction with both economic and social attributes. In this sense, there must be two different approaches to governance in strategic alliances. The first one is contractual governance which is based on the economic attribute and provides ways and means to control other members of alliance members. And the other one is trust governance based upon the social attribute.

2.5.2 Two modes of alliance governance

(1) Contractual governance

In strategic alliances, contractual governance is an important means to control the partners' behaviors. Through signing formal contracts, alliance members may regulate the members' responsibilities and obligations detailedly, and conversely offer their partners powers to protect their own interests from speculative behaviors of partners with the help of powers of a third party, namely laws (Dyer, 1997). Two types of market contracts are used to governance cooperation relationship. The first one is the classic contract that stipulates powers and obligations of alliance members in detail and that applies to transactions and cooperations with relatively simple contents, low environmental uncertainty, and relatively low level of specific

investments. With the level of specific investments and environmental uncertainty increases, making a detailed contract fixing all members' responsibilities and obligations and considering the changes of environment gets more difficult. The Neo-classic contract becomes a new controlling mode. Neo-classic contract emphasizes on required behaviors of members when the environment changes and improves flexibility and adaptability of cooperations, and thus applies to alliances that members rely on each other at a relatively high level but still remain independent.

(2) Trust governance

As statements mentioned above, strategic alliances have social transaction attributes that mutual trust between alliance members may emerge and develop in the cooperations. Many scholars claim from economics and sociology perspectives that private order and Trust/Embeddedness are approaches to control cooperations. Self-enforcing is the main feature of this type of control approaches, which means the implementation of these controlling modes does not require interventions of a third party (Dyer and Singh, 1998). Therefore, trust governance is more suitable for alliances with complex contents (Larson, 1992; Dyer, 1997). Uzzi (1997) points out that strategic alliances depending on trust governance have some characteristics as follows.

The first is a high level of trust. Williamson argues that trust governance requires complete rules for cooperations, otherwise alliance members will face high renegotiation costs when trust governance is implemented (Artz and Brush, 2000).

More researchers point out that trust is the decisive factor of trust governance because modifications of contracts and alliance flexibility can be realized at a low cost only when alliance members from the solid relationship to trust each other (Ring, Ven de Ven, Ven de meer and Gualti, 1996).

The second feature is integrated information exchanges. In cooperations relying more on market contracts, price concentrates all needed information to complete the cooperation, and thus the information exchanges between alliance members are at a relatively low level. However, in cooperations depending on trust governance, there are full and complete information exchanges between members.

The last one is joint problem-solving in cooperations. Cooperations relying on contractual governance require alliance members to behave in accordance with the terms of contracts and to complete relevant liabilities. While in alliances that trust governance plays a leading role in cooperations, alliance members need to consider themselves as members of a team and solve various problems jointly.

Actually, alliance governance modes are diverse. In other words, in particular relationship, alliance members may use both trust governance and contractual governance to constraint behaviors of their partners. Two approaches are embodied in the alliances, and what differs among different alliances is the relative degree of two governance modes. As Van de Meer et al. point out, although two governance modes exist in the same alliance, there is usually a relatively dominate controlling mode. A lot of theoretical and empirical research shows that governance modes of an alliance tend to trust governance or contractual governance to some extent and

that there exists some kind of substitution relationship between them (Uzzi, 1997; Ring and Van de Ven, 1992, 1994; Larson, 1992; Dyer, 1997). Note that alliance governance modes are not designed by managers according to exogenous factors such as cooperation risks, environmental uncertainty, and strategic goals of partners in the establishment stage of alliances, but are formed under certain conditions and will converse from a mode to another mode in the process of cooperations (Ring and Ven de Ven, 1992, 1994; Larson, 1992; Uzzi, 1997).

2.5.3 Choice of alliance governance modes

The study on the choice of alliance governance modes usually analyzes what factors influence the choice of alliance governance structures (Garcia-Canna, 2008; Garrette, 2009). Research on the choice of governance mechanisms tends to analyze what factors will influence the choice of alliance governance modes (Garcia-Cana et al., 2008; Garrette et al., 2009). Studies on contractual governance transit the emphasis from the choice of contractual governance to the degree of contractual governance. Literature shows that contractual governance is a most important mode of formal alliance governance structures (Reuer, 2007; Arino, 2008).

Robertson and Gatignon's (1998) study, based on transaction cost theory and using logit regression models to study technological alliances in multiple industries, shows that many factors such as low asset specificity, high technical uncertainty, easy to measure innovation performance, successful experiences of technological alliances, and low competition in product category will lead to technological alliances rather than internalization.

Pangarkar and Klein (2001) study the alliance governance modes of 2407 alliances in the US biotechnology industry based on transaction cost theory and using logistic regressions, and find that alliances with motivations to enhance R&D and marketing tend to choose ownership governance.

Mitchell et al. (2002) research governance modes of 227 alliances worldwide based on resource-based view and using logistic regression models, and their findings show that alliances aligned by product and R&D tend to be horizontal alliances, while alliances aligned by market resource sharing seem to be vertical alliances. Vertical alliances face with stronger opportunism risks and thus prefer to choose strong protection mechanism in alliance governance. However, horizontal alliances tend to choose governance mechanism at a higher level.

Colombo (2003) aims at governance structures of 271 alliances in the information technology industry in the worldwide based on transaction cost theory and resource-based view and using binomial and multinomial logit regression models, and demonstrates that alliances with large technology professional level differences between members are more inclined to use equity governance structure. The model based upon an integration of transaction cost theory and the resource-based view has a better explanatory power.

Sampson (2004) surveys governance structures of 232 R&D alliances in communication equipment industry in the period of 1991-1993 based on transaction cost theory and resource-based view and using probit regression models to find that: (1) in accordance with transaction cost theory, when there is difference in knowledge

base and difficulties to transfer knowledge between alliance members, they are more inclined to choose joint ventures; (2) in consistence with resource-based theory, when the knowledge bases of alliance members are distinctly different and thus risks of knowledge leakage are greatly reduced, the alliances tend to choose contractual governance.

Comino et al. (2007) combine transaction cost theory, resource-based view and real option theory, and study governance structures of 1344 alliances in the worldwide using probit regressions, and find that R&D alliances and competitive alliances tend to choose contractual governance, while large-scope alliances and international alliances tend to establish joint ventures.

Reuer et al. (2007) research contract complexity of 88 Spanish alliances using OLS regression models and based on transaction cost theory, and find that asset specificity and time pressure leads to high contract complexity, while the previous experience of cooperation will reduce the contract complexity.

Mellewigt et al. (2007) study contract complexity of 68 German alliances using logit regressions and based on transaction cost theory, resource-based view and relational theory, and demonstrate that trust weakens the relationship between control and contract complexity and strengthens the linkage between coordination and contract complexity.

Arino (2008) studies the effects of specific assets of firms with different sizes on contract modification based on transaction cost theory and dynamic theory, using multiple regressions of a dataset of alliances of 674 Spanish start-ups.

Rothaermeli and Boeker (2008) survey 32332 alliances in American high-tech industries, including biological industry and pharmaceutical industry, using logic regression models and based on the resource-based view, and analyze the impact of complementary and similarity of dynamic capabilities on alliance formation and governance.

Teng and Das's (2008) findings, based on resource-based view and polynomial regression analysis of governance structures of 765 US alliances in multiple industries, show that cooperative R&D, marketing motivation, and international alliances tend to choose alliance mode as joint venture, while alliances with rich management experiences have a tendency to not establish joint ventures.

Garrette et al. (2009) study the effect of product heterogeneity and resource capacity on alliance governance based on resource-based view and capability theory using logit regressions of a sample of 310 alliances in French aircraft manufacturing industry, and find that large project resource requirements, limited resources, strong resource matching and cooperation ability make alliances to choose peer cooperations.

2.6 Conclusion

This chapter has reviewed and explored various aspects of market orientation definitions in general at first. Then, I review behavior and culture view of market orientation, and explain the three dimensions of market orientation, i.e., customer orientation, competitor orientation, and inter-functional coordination.

In the second part, I review the related literature on innovation, including definitions of innovation, and classifications of innovation.

Next, as an important part of this chapter, literature on the effect of market orientation on innovation has been studied. I category these studies into four streams, namely direct effect stream, mediate stream, moderate stream, and multi-dimensional stream. By doing this, we can understand clearly the existing literature in this field and find my research direction.

The literature shows that market orientation will promote firms' innovation, though via different mechanisms.

However, a number of firms are still struggling with developing effective innovations. This is especially true for Chinese manufacturing firms, which are in the relatively bottom of value chains. Hence, the identification of the main barriers to developing innovations is important for both entrepreneurs and policy makers alike, in order to remove innovation hurdles and to effectively manage and stimulate innovation activities in industries. The case of developing countries, in particular, is still under-researched. Most studies of barriers to innovation are still hinged on case studies of developed countries. On the other hand, since innovation is a complex process driven by various factors, the nature of innovation in each industry tends to

be very specific. It is known that innovations in the manufacturing industry are greatly driven by customer needs, with the main contribution coming from incremental innovations.

On the basis of extant literature, I posit that there is a missing link between market orientation and innovation, and that it may be distributor alliance governance. Manufacturing enterprises involving new product innovation often contact with customers through their distributors rather than themselves. Moreover, since distributors are closer to the market than manufacturers, distributors can get hold of more market information. The concept of market orientation determines that market orientation does not contribute directly to new product development but through some middle processes of handling market information. And these middle processes of information processing may be antecedents of innovation.

Therefore, in the last part of the chapter, I reviewed the literature on alliance governance, including theoretical fundamentals, alliance governance modes, and research on the choice of alliance governance modes.

CHAPTER 3: MARKET ORIENTATION AND INNOVATION

3.1 Introduction

This chapter is about hypothesis development. First, I propose my conceptual framework which makes distributor governance as the mediating mechanism between market orientation and innovation according to the research gaps I have discussed in chapter 1. Second, hypotheses, which are about the relationship among variables are justified by the literature, are raised. Following the classic literature, I divided market orientation into three dimensions, i.e., customer orientation, competitor orientation, and inter-functional coordination. Distributor governance is divided into two dimensions, i.e., contractual governance, and trust governance. Moreover, innovation is divided into two dimensions as well, that is, incremental innovation, and radical innovation. I hypothesize the relationship between market orientation and distributor governance, and the relationship between distributor governance and innovation, respectively.

3.2 A conceptual framework

As the literature review in the Chapter 2 shows, three gaps exist in the literature. First, the prior research focuses more on the direct impact of market orientation on innovation, ignoring the potential middle mechanisms between market orientation as a type of organizational cognition and innovation as an organizational behavior. Especially for manufacturing firms, they always feel difficulties to acquire information about customer needs and competitors' activities accurately and quickly

in order to support their market-oriented corporate culture due to their long distance to customers. Therefore, effective alliance governance for distributors which are nearer to market is likely to become an important mean to ensure innovation. Second, although research has gradually viewed market orientation and innovation as multidimensional concepts, the differential effects of different dimensions of market orientation have not yet been effectively verified. Third, most of the existing research is rooted in the Western countries, but studies contraposing Chinese firms in the special economic environment are relatively scarce. At present, China is in a period of transition to market economies that the legal system is remained to be improved, and thus Chinese enterprises particularly value relational governance in an alliance relationship (Gao, Wang and Chen, 2012). In this context, research can be used to guide the practices of Chinese firms is yet to be explored further.

This study suggests that seeking effective alliance governance is an important mean to enhance innovations for market-oriented manufacturing firms. In particular, we should treat market orientation as a multidimensional concept, Customer orientation, competitor orientation, and internal coordination, three dimensions of market orientation, is likely to lead to differences in alliance governance as contractual governance or trust governance. Moreover, different governance patterns may help firms get market information of different aspects, resulting in different types of innovation (incremental innovation or radical innovation). In this study, we identify the key role of alliance governance as the middle mechanism in the relationship between market orientation and innovation, compare thoroughly

the differential impacts of three dimensions of market orientation on two alliance governance patterns, and distinguish the various innovative effects caused by the two alliance governance patterns.

Based on resource dependence and innovation theories, this research proposes that alliance governance is a mediating variable to the relationship between market orientation and innovation. That is, market orientation influences alliance governance, which in turn leads to different types of innovation. The conceptual framework of this study and the details of how the variables are related to each other are shown in Figure 10.

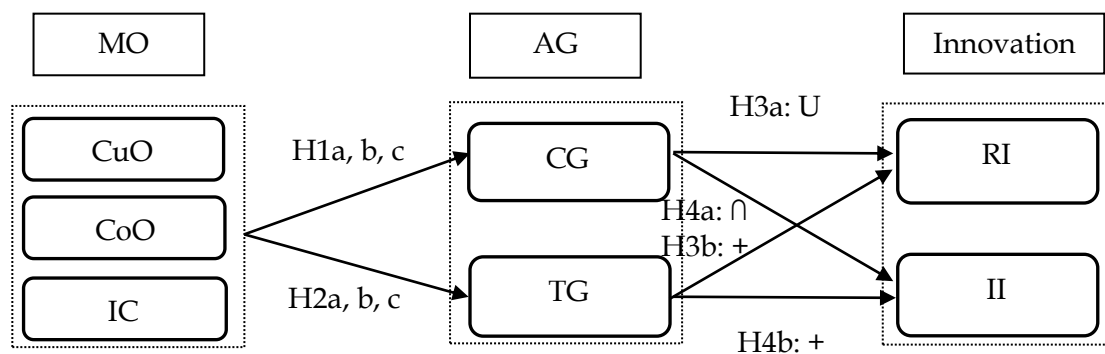


Figure 10 The conceptual framework

Notes: MO=market orientation; CuO=customer orientation; CoO=competitor orientation; IC=inter-functional coordination; AG=alliance governance; CG=contract governance; TG=trust governance; RI=radical innovation; II=incremental innovation.

3.3 Hypotheses development

3.3.1 Market orientation and distributor governance

Customer orientation, competitor orientation, and inter-functional coordination are three dimensions of market orientation, which operate in different ways. Customer orientation and competitor orientation require companies to obtain market information on customer needs and competitors' activities respectively (Narver and Slater, 1990). The market information helps firms develop appropriate tactics to respond rapidly. Interfunctional coordination emphasizes more on internal coordination and participation among various functional departments, which enhances the information sharing among them, and thus creates greater value for customers (Narver and Slater, 1990).

Alliance governance refers to the regulating and monitoring process in order to achieve the objectives of the alliance. Because of the existence of learning competition between strategic alliance members, alliance members not only learn from their partners as efficiently as possible in the alliance process, but also tend to protect their core knowledge from being learned and imitated by their cooperating partners. Moreover, because the production and transfer of knowledge take a lot of time and efforts, and the collection and transfer of knowledge are difficult to be supervised, alliance members are likely to try to reduce their own expenses in the collection and transfer of knowledge and thus take opportunistic behaviors in the cooperation. In this vein, alliances need to adopt certain powerful and effective governance mechanisms to reduce opportunistic behaviors of their members, to ensure the transfer of knowledge cooperation among members, and thus in order to

achieve the knowledge transfer objectives of the alliance. Dyer and Singh (1998) propose a framework of the two main control modes in the strategic alliances: contractual governance and trust governance.

(1) Customer orientation and contractual governance

Customer orientation requires firms to collect, disseminate and share information about customer needs (Zhang, 2005). Chen and Sun (2007) find that customer-oriented companies are very concerned about obtaining explicit knowledge. This is because the information of consumer demand and consumer complaints can all be recorded by the way of writing, and then can be summarized by the staff of the enterprises, and the information about customers will be possible to become explicit knowledge for the enterprises. Thus, customer-oriented enterprises need to get explicit knowledge through a variety of different ways to make the business more successful.

Contractual governance of alliance emphasizes through a standardized contract to build and use formal rules, procedures, and policies to monitor and encourage desired behavior. Through formal contracts, alliance members can be detailed provisions the responsibilities and obligations of all parties, and in the embodiment of speculation partners they can rely on the law to protect their own interests. Formal contracts for partnership control are usually classical contract, such a contract requiring the two sides to sign the contract at the time of full cooperation to restrain conduct of the parties, a clear definition of the rights and obligations of both parties, and resources into the quality and quantity. The Union benefits distribution of content, but also has the need to develop appropriate punishment

mechanism and strict supervision of the process, allowing the Alliance to increase both the cost of default, to ensure effective implementation of the contents of the contract. Dyer (1998) point out that, since formal control is not strengthened control and must be maintained in the process of cooperation, the two sides will have an incentive to otherwise default.

Through the dealer contractual governance, manufacturers can provide clear and detailed requirements in the contracts with distributors in order to get market data. For example, when companies need to know a new product's performance data in the marketplace, including consumer geographical features, ages, occupational characteristics, personality preferences as well as product evaluation feedback, etc., it is available for the manufacturer to make detailed provisions through a contract with the dealer. Thus, after the digestion and absorption of the knowledge, customer-oriented enterprises gain the explicit knowledge of the consumer, and the product can be further optimized to meet market demand.

In a manufacturer—distributor—customer context, the distributor has good access to customer information and is usually willing to share it with manufacturers. In this way, manufacturing firms can obtain basic market information and explicit knowledge from alliance partners through a conventional contractual governance arrangement, in which distributors receive a financial incentive and other clearly defined rights and obligations in exchange for the customer information (Argyres and Mayer, 2007). Hence, we have:

H1a: Contractual governance (CG) will increase when customer orientation (CuO) becomes higher.

(2) Competitor orientation and contractual governance

Competitor orientation indicates that a supplier understands competitors' short-term strengths and weakness and long-term capabilities and strategies (Day and Wensley, 1988). Ultimately, the supplier aims at winning over its competitors' customers. One important feature of a competitor-oriented supplier is that such a supplier provides the manufacturer with the value that is superior to the value associated with competitors.

Competitor orientation refers that an enterprise has the clear understanding of existing and potential competitors' strengths and weaknesses as well as short-term and long-term capacities and strategies, and accordingly develops action strategies. Competitor-oriented enterprise attaches great importance to the gathering of relevant information of the existing and potential competitors in the marketplace, which is the main basis for enterprises to develop action strategies. Therefore, similar to customer-oriented enterprises, competitor-oriented companies focus on obtaining explicit knowledge of relevant competitors.

A competitor-oriented manufacturer, by definition, will be engaging in activities geared toward developing an understanding of the consumers' current and future needs, sharing this information across departments, and using this information to improve its customer service (enhancing benevolence and credibility) continuously. So, a competitor-oriented manufacturer is likely to demonstrate to the

distributor that (1) the supplier will provide the best products and services, (2) the supplier is behaving in the best interests of the manufacturer because the market orientation of the supplier creates customer values and satisfies customer needs, and (3) the supplier is less likely to act opportunistically for its own benefits (Anderson, Fornell, and Lehmann, 1994; Joshi and Randall, 2001). The hypothesis is:

H1b: Contractual governance (CG) will increase when competitor orientation (CoO) becomes higher.

(3) Interfunctional coordination and contractual governance

Inter-functional coordination represents the integration of all functions in the firm (Han et al., 1998). It requires that a supplier undertake an organization-wide focus on satisfying the manufacturer's needs. Therefore, inter-functional coordination determines the outcomes of market orientation behaviors. Without inter-functional coordination, all the innovative ideas and information of serving the customers cannot be turned into organization-wide actions.

Depending on the respective study referenced, inter-functional coordination can mean different things. For example, various literature has stressed the need for communication or integration, where meetings and documented information exchange predicate the relationships between departments. More meetings, greater written documentation, and increased information flows will be favored to promote inter-functional coordination. Other studies have used the terminology of collaboration, where teamwork and resource-sharing typify inter-functional relationships. Efforts that instill collective goals, mutual respect, and teamwork between departments would be preferred. There is also other research suggesting

that coordination via information-exchange and involvement comprise relationships with other functions (Oh and Sun, 2007). In other words, interaction and collaboration are both important elements of inter-functional coordination.

As such, firms with a high level of inter-functional coordination will focus more on the tacit knowledge within the firms. However, contractual governance will be effective to help firms acquire explicit knowledge from their alliance partners. Therefore, we suggest that the relationship between inter-functional coordination and contractual governance will not be that significant.

H1c: Interfunctional coordination (IC) has no effect on Contractual governance (CG).

(4) Customer orientation and trust governance

A recent stream of research in relationship marketing suggests that customer orientation can lead to competitive advantages for a company through the exploration and exploitation of a relationship of trust and commitment between the company and its customers (Walter et al., 2003; Saporito et al, 2005). Specifically, Walter and Ritter (2003) suggest that since adjustments represent customer-oriented supplier of advances and interest to solve the problems of customer risk, customer focus can initiate and maintain a relationship of trust and commitment between the buyer and seller. In turn, committed customers who believe in the honesty and competence of the seller are the main drivers of the exploration and exploitation of the company's value. Echoing Griffith (2006), Harvey (2012) proposes that customer orientation affects the development of the share capital of a company (ie, customer trust for the company), which in turn influences the capacity and dynamic performance of the company. In addition, Saporito et al. (2004) find that customer

focus in the banking sector can "cultivate customer relational trust, which, in turn, binds customers emotionally to their banks and reduces their propensity to change.

Thus, these authors find a customer orientation-customer trust-firm performance (CTP) causal chain.

Since the alliance transactions have a clear social dimension, trust governance, which is usually used in a social relationship, they can also be used to organize the alliance deal. The theoretical basis of this governance method is the social transaction theory, emphasizing the use of organization standards, values, culture and internal goals to encourage desired behaviors and outputs by reducing the alliance members' speculative self-interested behaviors. As a non-mandatory control, compared to contractual governance, trust governance emphasizes more on flexibility and adaptability to the environments. Alliance members of the cooperation establish shared values, practices and culture so that all parties can achieve self-regulation, common solutions, and thus cooperation members can facilitate the smooth implementation of the cooperation. Strategic alliances depending on trust governance have three characteristics: a high level of trust, integrated exchange of information, and joint problem solving with cooperation partners (Uzzi, 1997).

Accordingly, we hypothesize that:

H2a: Customer orientation (CuO) has no effect on Trust governance (TG).

(5) Competitor orientation and trust governance

Some studies suggest that competitor-oriented firms, which continuously monitor progress against rivals, gain opportunities by creating products or marketing programs that are differentiated from those of competitors (Im and

Workman 2004) or by adopting an effective ‘second-but-better’ approach (Frambach et al. 2003). Still, some researchers argue that competitor orientation is a central source of product imitation and that this results in a negative impact on innovation consequences (Lukas and Ferrell 2000). In line with the arguments of the majority of scholars, we suggest that there is no effect on competitor orientation and trust governance:

H2b: Competitor orientation (CoO) has no effect on Trust governance (TG).

(6) Interfunctional coordination and trust governance

Compared with customer orientation and competitor orientation, inter-functional coordination requires more in-depth market information (Zhang, 2005). Therefore, firms emphasizing more on inter-functional coordination may take trust governance to promote trust, cooperation and information sharing between alliance members, and thus obtain deep-level market information from distributors rather than just basic information on consumer needs and competitors. According to resource dependence theory and transaction cost perspective, firms more dependent on resources and abilities of alliance partners to meet their own development needs are more willing to pay best efforts and costs to maintain and enhance the interdependent and cooperative status (Uzzi, 1997; Xue, Lei and Yi, 2010). It is, therefore, reasonable to assert that firms emphasizing inter-functional coordination are more likely to prefer trust governance to contractual governance.

H2c: Trust governance (TG) will increase when inter-functional coordination (IC) becomes higher.

3.3.2 Distributor governance and innovation

(1) Contractual governance and radical innovation

Contractual governance is a formal incentive mechanism that it is based on financial interests and contracts (Mellewigt, Madhok and Weibel, 2007; Ryall and Samspon, 2008). Firms adopting a contractual governance do not trust in their alliance partners enough, and thus the initiatives and cooperation intentions of distributors reduce (Hao, 2005). Distributors may feel anxious and distrusted and thus are not likely to cooperate fully when manufacturing firms adopt contractual governance only, and they may retain important market information to improve their bargaining power with manufacturers (Dyer and Singh, 1998).

This study proposes that the effect of contractual governance on innovation may be U-shaped. Contractual governance within a certain limit will reduce the enthusiasm of distributors to cooperate and thereby reduce their participation in alliance relationship and manufacturers' operation (Mahnke and Özcan, 2006). A low level of contractual governance may ensure that distributors dutifully provide basic market information, but cannot encourage them to share more valuable and private market information that is required by radical innovations urgently. Radical innovation only occurs when technologies or processes experience essential changes that have to be based upon a large amount of valuable information (Kurt and Ding, 2005).

However, when contractual governance goes up to a high level, distributors may be encouraged to share more private market information due to clear and detailed provisions of rights and obligations in contracts. The clear-claimed

contracts, reducing the anxieties of distributors in the alliance relationship, may increase their willingness to cooperate (Ryall and Sampson, 2008). Since the role of private market information as bargaining chips to protect distributors' interests and maintain alliance relationship is no longer necessary, distributors are likely to share the information as long as firms provide them with satisfying financial interests. Thus, a high degree of contractual governance will enable radical innovation. Based on the above discussion, we propose the hypothesis:

H3a: Contractual governance has a U-shaped effect on radical innovation.

(2) Trust governance and radical innovation

Radical innovation is the ability-destroyed type of innovation that makes the products (or services) performance witness tremendous transition out of the existing technology, create new markets, and the competition in the industry have a decisive impact on the industrial landscape (Andreas, 2007; Qin et al., 2012; Wilfred and Geert, 2010). As a type of "truly new" innovation, the uncertainty, discontinuity, randomness and divergent characteristics of radical innovation put forward higher requirements for the organizational routines, organizational structure, organizational culture, management experience, communication skills and cultural organization rooted type tacit knowledge. To meet the needs of radical innovation, companies must obtain scarce organizational tacit knowledge from external social networks. Valle and Vázquez-Bustelo's (2009) study have shown that cross-sectoral integration, event organization rooted tacit knowledge overlap and team effectiveness, can significantly enhance corporate performance radical innovations. Herrmann et al. (2007) find that learning orientation/ risk appetite and innovation-

oriented organizations such as cultural tacit knowledge can effectively enhance radical innovation performance. Li, Zheng and Wei (2010) point out that a lot of information for the efficient conduct search of work required for radical innovation, companies must organize tacit knowledge acquisition and accumulation, to establish and perfect a series of the corresponding organizational system.

Additionally, trust governance also makes distributors more willing to share valuable information at a deeper level than basic market information with manufacturers to carry out full cooperation, which may help firms achieve radical innovations. Distributors are usually able to access valuable private information, and the sharing of private information may be more likely to promote essential improvements in core technologies or processes, which produce radical innovation, when distributors participate fully in the innovation process. Therefore, we assume that:

H3b: Trust governance (TG) positively influences radical innovation (RI).

(3) Contractual governance and incremental innovation

Contractual governance's role in promoting incremental innovation may be just the opposite compared to trust governance. This study suggests that contractual governance will generate an inverted U-shaped impact on incremental innovation. A lower degree of contractual governance can not only guarantee the smooth sides of the alliance but also makes the dealer dutifully share basic market information. Market dealers' sharing information about customers and competitors, can help enterprises in the product, service or process to make minor, incremental

improvement for customer needs and competitors' strengths and weaknesses, which further result in gradual and cumulative innovations.

However, a high degree of contractual governance will not be conducive to the incremental innovation. When the contractual governance level is too high, dealers pay more attention to the deeper privatization market information that those enterprises cannot get, in order to expect more benefits from the manufacturing firms. The ignorance of the basic information of customers and competitors will result in the inability to accurately grasp the details of customer demand for products and services, and the change of product cannot be a strong improvement, and therefore cannot achieve more incremental innovation. According to the arguments above, this study hypothesizes:

H4a: Contractual governance (CG) has an inverted U-shaped effect on incremental innovation (II).

(4) Trust governance and incremental innovation

Trust governance is based on the relationship between alliance partners and full confidence in partners (Poppo and Zenger, 2002; Lee and Cavusgil, 2006). Firms adopting a trust governance are more likely to trust in and cooperate with their distributors, which may improve distributors' initiatives and cooperation intentions (Poppo and Zenger, 2002). Many studies claim that trust governance will improve distributors' participation, reduce the uncertainty of innovation, and eventually improve the environment for innovation (Mahnke and Özcan, 2006).

Trust governance will encourage distributors to provide firms with market information about customer needs and competitors' activities more conscientiously, which helps firms achieve incremental innovation. Trust governance allows deeper mutual-cooperation, making distributors more involved in the innovation process of manufacturers (Poppo and Zenger, 2002). As distributors are closer to the end customer, whether this is a consumer or a business user, and may act as an agent for a variety of competing products, distributors will understand competitors better than manufacturers and can, therefore, provide relevant market information to manufacturers. Liu, Zhao and Li (2010) argue that trust governance will contribute to knowledge acquisition in alliances. Therefore, we believe that trust governance will promote incremental innovation.

H4b: Trust governance positively influences incremental innovation.

3.4 Conclusion

This chapter has proposed the conceptual model of this study (Figure 10). I constructed a model linking market orientation and innovation through alliance governance. Drawing on the theories, I suggested several hypotheses about the relationships between three dimensions of market orientation and two types of alliance governance, and between the two types of alliance governance and two important types of innovation.

Thus, I have had 10 hypotheses. H1a hypothesizes that contractual governance (CG) will increase when customer orientation (CuO) becomes higher. H1b hypothesizes that contractual governance (CG) will increase when competitor

orientation (CoO) becomes higher. H1c hypothesizes that inter-functional coordination (IC) has no effect on Contractual governance (CG). H2a assumes that customer orientation (CuO) has no effect on Trust governance (TG). H2b assumes that competitor orientation (CoO) has no effect on Trust governance (TG). H2c assumes that trust governance (TG) will increase when inter-functional coordination (IC) becomes higher. H3a states that contractual governance has a U-shaped effect on radical innovation (RI). H3b states that trust governance (TG) positively influences radical innovation (RI). H4a suggests that contractual governance (CG) has an inverted U-shaped effect on incremental innovation (II). H4b suggests that trust governance positively influences incremental innovation.

On the basis of the establishment of my conceptual model, and the proposition of specific hypotheses about the relationships among the main variables, I can go to verify the relationships among the variables through some statistical methods. Thus, the Chapter 4 will describe the methods of my research. I choose a mixed method of qualitative and quantitative statistical methods for testing my hypotheses.

CHAPTER 4: METHODOLOGY

4.1 Introduction

This chapter elaborates on the research design employed in this study, including the rationale for the selection of such a method. Specifically, it explains why the selected research methodology is appropriate for this thesis and how it has been implemented in light of the research questions. Moreover, this chapter illustrates data collection techniques selected in accordance with the chosen research method, so that my research questions can be answered adequately.

As mentioned in chapter 3, my hypotheses argue that the effect of market orientation on innovation could not be direct but indirect via alliance governance. Consequently, the research design methodology that can appropriately answer the specific research questions proposed in chapter 1 will have to involve both qualitative and quantitative methods. The qualitative research method gathers the required data and information using literature review, expert interview and semi-structured firm interview designed to help examine and provide a better understanding of the nature, characteristics, roles, and activities of each typical firm, as well as the relationships between market orientation and innovation. Thereafter, the quantitative method is employed, using a survey to verify and confirm the findings obtained from the qualitative research stage.

The following sections elaborate on the reason why the mixed research paradigm of qualitative and quantitative methods is the most appropriate research

tool to use to answer my proposed research questions and explain which data collection technique should be used for each research method to gather the information and data needed to help test my hypotheses.

4.2 Qualitative versus quantitative methods

There are three main objectives of this research: 1) to understand the various different governance and innovation experiences of various firms in Chinese manufacturing industry; 2) to identify whether market orientation has a strong relationship with alliance governance; 3) to identify whether alliance governance has a strong relationship with innovation. To be able to find the answer, using only one research method, i.e. either qualitative or quantitative, will not be able to help us. A qualitative method will help us to explore and understand the various experiences of firms and how they innovate, and it will also provide us with the in-depth understanding of alliance governance of Chinese manufacturing firms. At the same time, quantitative methods will help us to redefine our qualitative analysis results and to identify and analyze the relationship between market orientation and alliance governance and alliance governance and innovation. The following section will explain the advantages and disadvantages of the two methods, and for which we use two methods to provide the basis.

4.2.1 Qualitative method

This research method based on interpretivism and constructivism (Sale et al., 2002) is used as a tool for exploring and understanding people's beliefs, experiences, attitudes, behaviors, and interactions. It is widely used in many social disciplines in many different disciplines, but in recent years it has also been used in market

research and other disciplines. As the name suggests, qualitative research methods basically produce non-numerical data, such as the description of the characteristics of the enterprise, rather than measure its characteristics.

Researchers from the qualitative research attempt to study the deep understanding of human behavior and the reasons behind this behavior. Basically, this research attempts to explore not only the "what", "where" and "when" problems, but also the "why" and "how" of human behavior and decision making. Thus, through this type of study, population samples are usually smaller and more concentrated (Sale et al., 2002).

Qualitative research is usually used when researchers cannot determine expectations, define what problems or develop methods. In addition, The problem of interest requires further investigation (Mora) when executed. There are five types of qualitative studies using similar approaches: phenomenology, ethnography, case studies, basic theory and historical research (Johnson and Christensen, 2010).

4.2.2 Quantitative method

Quantitative methods focus on the measurement when collecting or analyzing data. The result of quantitative methods is usually the result of objective knowledge, which means that knowledge is independent of the beliefs and values of the people concerned (Creed et al., 2004). The usual goal of researchers using quantitative methods is to measure and analyze the causal relationship between variables within a valuable framework. The method is also used to help describe quantitative discovery (Sale et al., 2002).

The main techniques used for quantitative research usually include randomized, blind, highly structured solutions, as well as written or oral questionnaires with a limited range of predetermined responses. Thus, the sample size is much larger than the sample size in the qualitative study, so an appropriate statistical method for ensuring the representation of the sample can be used (Sale et al., 2002).

Quantitative research is widely used in many areas of study, including social science such as psychology, economics, sociology and politics, and sometimes in anthropology and history. Quantitative research methods include many research types, such as investigation studies, related studies, experimental studies, and causal comparative studies (Sukamolson, 2003).

4.2.3 The mixed methodology of qualitative and quantitative methods

In answering these three research questions, this article first needs to develop and look at the industry structure, and how companies manage their alliance and innovation. Different from the current assumptions of the macro perspective, assuming that the manufacturing enterprises have the similar or homogeneous model, this paper attempts to explore and study the characteristics of enterprises, alliance governance and its relationship with innovation. In addition, in order to compare and confirm the status of the tire industry, this paper attempts to study whether the structure can be compared with other manufacturing enterprises. The research methods used need to help us to view and examine these features and experiences, so as to more accurately understand the industry. In addition, the paper needs to examine the relationship between market orientation and alliance

governance and alliance governance and innovation, and we need a research method that can quantitatively test and explain this relationship.

All in all, we need a research methodology that enables us to explore, examine and understand the operation and structure of the industry and examine the experience of the enterprise within the distributor. In addition, we need a research method that allows us to test the theoretical framework and re-confirm the relationship between variables. This means that separate qualitative or quantitative research methods are not sufficient to achieve satisfactory results and answer research questions.

Nevertheless, both methods have many advantages and limitations. Qualitative research may be best suited to explore problems, plot the complexity of the situation, and provide a detailed understanding of the problem. However, qualitative research results from the study of some individuals, the lack of ability to promote the results. On the other hand, quantitative research may be best used to understand the relationship between variables, or to determine whether a group of results better than other groups. Although the researchers carried out quantitative checks on many people, this does not explain the general interpretation of the relationship between variables, and the understanding of any one person will be weakened. Thus, the limitations of a method can be offset by the advantages of another approach, and the combination of quantitative and qualitative data can be more comprehensive than any one of the methods to understand the research problem.

In addition, in recent years, many researchers have accepted the combination of two research methods and often find the most appropriate way they are looking for. For example, Haase and Myers (1988) point out that their common purpose is to understand the world in which we all live, while Reichardt and Rallis (1994) affirm two ways of "working together to understand and improve human living conditions, disseminate knowledge. A common goal for actual use, and a commitment to rigor, seriousness, and criticism in the course of the study "(Sale et al., 2002). The hybrid method provides a bridge between quantitative and qualitative researchers sometimes confront the gap.

This paper uses a hybrid approach to reduce these limitations and enhance their advantages. We need an in-depth understanding of the industry structure, industry operations, and the company's innovation model; in addition, we need to generalize exploratory discoveries in order to test the theoretical framework through empirical evidence.

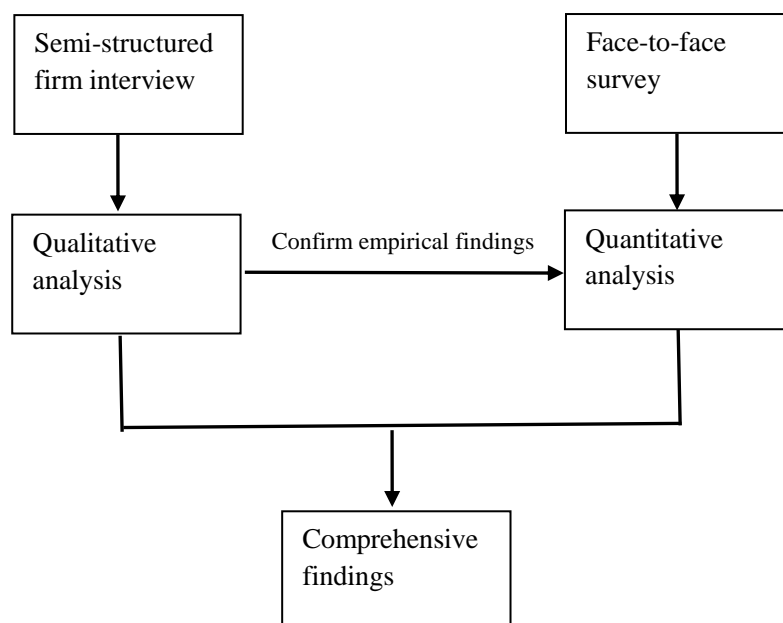


Figure 1 1 Mixed methodology of the thesis

The research methodology for this thesis is illustrated in figure 11. The paper will first take a qualitative approach, that is, semi-structured business interviews, to understand the industry structure, alliance governance methods, and innovative experience. This visit will produce a hypothetical industry structure and model. However, since we only visit several companies, we need to use quantitative research methods, that is, face-to-face surveys to prove and re-confirm our findings. In addition, the interview process is used to investigate the issues that need to be addressed, the variables that need to be measured, and the theory that may guide the investigation. The interview helps us to learn what questions, variables, theories, etc. need to be studied, and then follow the quantitative research to summarize and test what is learned from the exploration. The survey uses validation and validation of the results obtained from the early research phase. This is also an attempt to get information that cannot be explored during the interview phase. The survey data is also used to test the initial assumptions and demonstrate the usefulness of the research method.

4.3 Research method for this research

Overall, my research will be conducted in three steps. First, I am going to find out that is there a middle mechanism between market orientation and innovation. In order to find the answer, I will conduct a case study of DC Group. Second, I will find out are there two dimensions of this middle mechanism. A multi-case study will help to answer this question. Finally, I will find out how does this middle

mechanism affect in the relationship between market orientation and innovation.

The answer will lie in the quantitative statistics analysis of survey data.

This study employs the mixed model research method, using both qualitative and quantitative methods to adequately answer my proposed research questions. As stated in chapter 1, I attempt to examine whether or not the innovation of Chinese manufacturing firms is influenced by market orientation indirectly via alliance governance. Typically, to test this theoretical framework, I could only collect data from firm surveys and perform statistical analysis to confirm the hypotheses.

However, in order to better understand the industry and reaffirm my understanding of the organizational structure, I began to study qualitative data such as structure, firm type, market differentiation, relationship with alliance partners, and innovation differences. In addition, I collected quantitative data through surveys to validate and confirm the results obtained from the early research phase. This is also an attempt to get information that cannot be explored during the interview phase. Therefore, the ability to identify the relationship between market orientation, alliance governance and innovation will help to provide better guidelines for decision makers. In addition, the survey data are used to test the above assumptions.

I used three research methods to draw conclusions. First, use a data review to help us use the framework to review secondary materials and to build high-level images of different types of businesses and activities by visiting experts. Second, a series of semi-structured interviews were conducted with a small number of samples to help us understand the business model of manufacturing enterprises. This helps us understand the key issues of governance and innovation in manufacturing

enterprise coalitions and build a theoretical framework. Finally, a larger questionnaire helped me to validate and reaffirm the results of industry data reviews, expert interviews, and corporate interviews.

The following sections describe the data collection methods used and explain how each method is dedicated to this paper.

4.3.1 Semi-structured firm interview

After reviewing the industry and company information, face-to-face semi-structured interviews were conducted. The chemical company interviewed. This helps us understand the business model of Chinese chemical companies in alliance governance and innovation.

Semi-structured interviews are used to collect qualitative data by asking and discussing the various topics of the opinion, in which case the chemical manufacturing process. The interviewer develops and uses an "interview guide", which is a list of questions and topics that should be covered in the conversation. The interview guide provides researchers with a clear set of guidelines that can provide reliable, comparable qualitative data (Robert Wood Johnson Foundation) to a large extent. Interviews enable researchers to collect the required data and gain personal knowledge (Kajornboon, 2005).

One of the reasons for choosing a semi-structured interview is that one of the ways to collect qualitative data is to first collect highly personalized data, and second, to provide me with the opportunity to further explore the visitor. As most researchers already know, it is important to set up interview questions so that they

can extract valid responses from the interviewees and thus correctly guide the researchers to find the answers they are looking for.

The use of semi-structured interview methods has some key advantages, such as providing reliable and comparable qualitative data and allowing respondents to freely express their opinions and opinions in their own way (Kajornboon, 2005).

However, the disadvantage of semi-structured interviews is that if the interviewer is inexperienced, if the participant begins to talk about other topics that are not included in the interview question, it may not raise some timely questions and may not be able to collect some key data (Kajornboon, 2005). Researchers need some experience and training to conduct effective interviews and collect the data and information needed to complete the study.

Justification for semi-structured firm interview

The main purpose of the semi-structured interview is to gain a deeper understanding of the industry, a better understanding of industry structure, alliance governance and innovation activities. This paper questions the current direct impact of market orientation on innovation. Therefore, we need to review and develop a more accurate industry structure. For a semi-structured interview, giving us an accurate industry situation, we have to choose the industry in the experience and work of the appropriate respondents, rather than from the "macro level" to look at these respondents. To do that I selected interviewees that were CEOs and CTOs in the Chemical firms. This allowed us to cover all the activities and structure of the industry and how players operate within it. Further, to be able to have valid and reliable information, we selected respondents that have long experience within the

firms and are involved in the government agenda. Hence, most of our respondents are CEOs or CTOs of companies (1 CEO and 1 CTO in every firm). They have tacit knowledge so we are able to get insight from them, which the macro data did not provide.

This method is very important because it is through the provision of qualitative data to help us develop the first step of the hypothetical framework. The view will be used for comparison and comparison with the current view. More importantly, this photo will be used for comparison with the theoretical framework used in the direct view. In addition, the qualitative findings of the interviews enable us to better understand and break down the industry and help us to analyze and break down industry information, as well as the coalition approach adopted by each company. We need this information to compare the results of the literature review and provide the industry with new knowledge and insight. Semi-structured access is needed because we need a high degree of specific but complex data in a very short time, and we have only one chance to meet. This approach provides a more detailed view of the freedom of view of industry structures and activities. In addition, respondents can speak freely and openly in a private environment with regard to the impact of coalition governance.

Interview protocol

We used the list of firms from Chinese Chemical Institute to select the firms to be interviewed. Then we selected several firms from the largest companies for the interview.

When we called and asked for the interview, we inquired about having an exclusive interview with the owner or managing director of each company. This is because they have in-depth knowledge and understanding of the industry, company business model, market, their relationship with distributors. They also have comparable experience, knowledge, and understanding of the industry, hence they could provide us with a better and more accurate picture of the industry than others. However, if the managing director or owner of the company was not available, we would tend to interview those responsible for marketing and sales and R&D. This is because the main objective of the study is to understand the relationship between alliance governance and innovation.

All the interviews were conducted face-to-face at the company location. This was done so that we could elaborate and explain theoretical concepts that the interviewees were not used to. It also helped us to probe and discuss the business models and issues faced by each firm. Most importantly, by having face-to-face interviews at their office, they could provide us with the company and quantitative data that increased the credibility of my study. The interviews normally took around one and a half to two hours per company, because the interviewees had many details to explain and elaborate on.

Seven Chemical firms were selected in the firm interview methodology, including three basic chemical raw materials manufacturing firms and four specialty chemicals manufacturing firms. The distribution of the firms is listed by industry and firm characteristics in the following table 3.

Table 3 Distribution of the sample by industry and firm characteristics

Industry		Firm age		Firm size (employees)		Industry status		Domestic market share	
		<30 y	>30 y	<1000	>1000	Leader	Follower	<30%	>30%
Chemical industry	Basic chemical raw materials manufacturing	1	2	2	1	3	0	2	1
	Specialty chemicals manufacturing	1	3	4	0	3	1	1	3
Total N=7 firms interviewed		2	5	6	1	6	1	3	4

Interview guideline

The interviews aimed to provide an understanding of the activities that each organization performs. Basically, the guideline set up for interview questions was divided into three main sections corresponding to my hypotheses and the proposed questions. The design of the interview questions is given in more detail below:

Interview checklist 1 (for CEO)

1. Please briefly introduce the background and history of your firm.
2. Do your firm pay attention to customer service?
3. Who are your main competitors? Do you pay attention to competitor activities?
4. How about coordination among the departments of your firm?
5. How about innovation of your firm?
6. What do you think about reasons for the success (failure) of new product innovation?
7. How does your firm process market information?
8. How does your firm deal with distributors?

Interview checklist 2 (for CTO)

1. Please introduce your product categories.
2. How about new product innovation of your firm?
3. What is the greatest success (failure) of your new product innovation you have faced?

Please give me some examples.

4. What do you think about reasons for the success (failure) of new product innovation?
5. How do you think you should do to ensure the success of new product innovation?

The data gathered from the firm interviews enabled me to understand the roles and activities of each firm, the nature of the firm and its relationships with distributors in the marketing chain, as well as its view on new product innovation.

4.3.2 Face-to-face firm survey

The survey method is a more systematic approach for collecting data or information from individuals, and it attempts to articulate and understand the basic characteristics or experiences of the size of the population to which these individuals belong (Enanoria, 2005).

There are many key benefits of face-to-face survey methods for data collection, especially in terms of data quality, as compared to other types of surveys, such as respondents who can ask the interviewer / researcher to clarify if they find confusion or blur. It also allows for complex questions and provides researchers with

a fairly high degree of control over the data collection process and the environment (Doyle). However, this data collection approach has some shortcomings, including higher costs, more time-consuming processes such as paperwork and logistics, and the need for skilled visitors to obtain high-quality data. In addition, respondents' answers to questions sometimes are less likely to be honest than other data collection methods that do not require face-to-face. In some cases, especially for unskilled interviewers, interview bias can be introduced by inadvertently influencing the person's speech or behavior in a particular way to answer (Doyle).

The company survey was conducted after I collected and checked the information from the quality research phase. The qualitative data collected from the literature review and the company's interview phase gives me a better understanding of the nature of the relationship between market orientation and alliance governance and alliance governance and new product innovation. As a result, I was able to extract the data and information collected and form the company more effectively.

Justification for face-to-face firm survey

This survey is very important for this paper. It is used to collect quantitative information about the views and opinions of industry samples, and we need a better understanding of the industry. It is also used for statistical analysis to test our findings and theoretical framework. First, it is used to verify and confirm the information in the company's interviews. We tested the collected data to see if they met the type of market-oriented company found in the interview. In addition, we use these data to test the relationship between market orientation, alliance

governance, and innovation. The data collected better describe the relative characteristics of the general population involved in the study because of the large population. It is easier to find statistically significant results when using other data collection methods.

4.4 Data

The source of data is a survey of Chinese tire industry in the period of 2012-2013. To determine our sampling frame, the databases were provided by the tire branch of Chinese Rubber Association. The sample covered 13 provinces in Eastern, Western, Southern, Northern and central China areas, i.e., Shandong, Beijing, Guangdong, Guangxi, Henan, Hebei, Sichuan, Shanxi, Liaoning, Jiangsu, Zhejiang, Shanghai, and Xinjiang.

Our constructs of the questionnaire are derived from the existing research. Because the original scales were in English. We at first asked two bilingual individuals to translate the English questionnaire into Chinese. Since they were familiar with both languages and our research backgrounds, we ensured that the items of Chinese questionnaire bore the same meaning as the original measurements. Then, we asked another two bilingual individuals to translate the Chinese questionnaire back into English, in order to ensure accurate questionnaires.

Our subjects were general managers of the sample firms. In order to overcome potential common method bias, we divided the questionnaire into two parts which contained measurements of independent and dependent variables respectively and then invited two top managers of each firm to answer the two parts respectively. The survey investigated a total of 208 firms and recovered 135

questionnaires. Weeding out unqualified questionnaires, we got 122 valid questionnaires (response rate 58.7%).

To get a full understanding of my sample firms, a series of descriptive analyses are made as following, including firm age, employee, firm financial size, firm type, the age of respondents, the tenure of respondents, career experience of respondents, patent, number of main alliance partners, and firm location.

Figure 12 shows the distribution of sample firms by firm age. The figure displays that more than 80% of the sample firms have been established for more than 5 years, and more than 18 firms have been started for even more than 30 years.

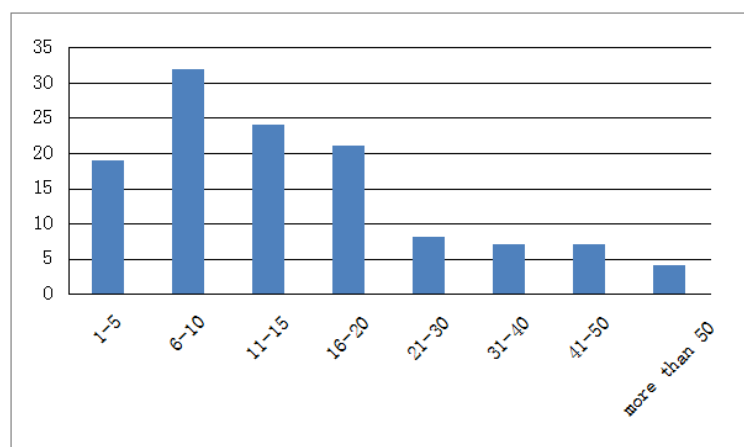


Figure 1 2 Distribution of sample firms by firm age

Figure 13 shows the distribution of sample firms by the employee. It is shown that large firms (more than 2000), medium firms (300-2000), and small firms (less than 300) are approximately an equal number.

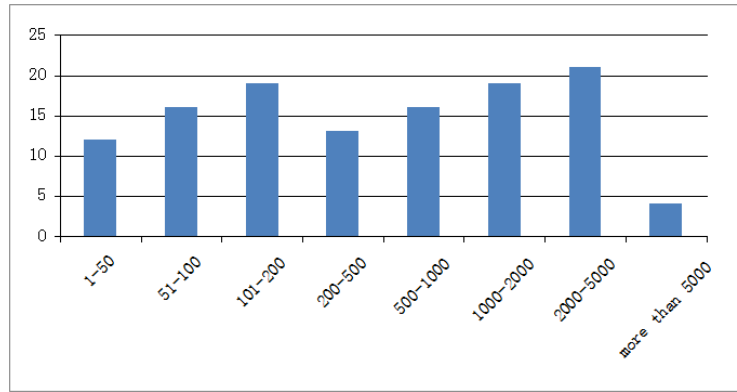


Figure 1 3 Distribution of sample firms by employee

Figure 14 shows the distribution of sample firms by firm financial size. It can be seen from the figure that 26 firms' assets are less than 20 million yuan, and the most of firms (17 firms) have assets between 20 and 2000 million yuan.

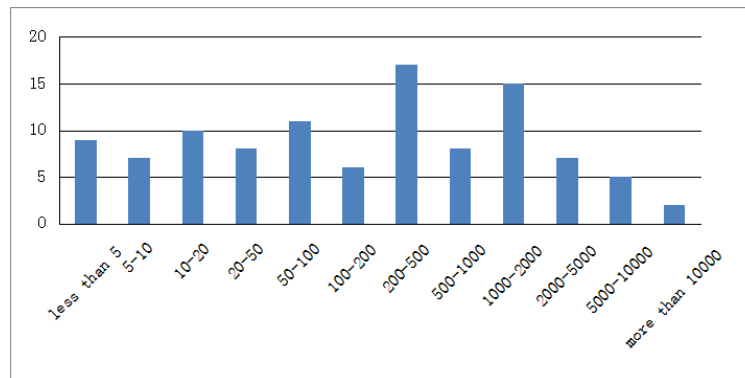


Figure 1 4 Distribution of sample firms by firm financial size

Figure 15 shows the distribution of sample firms by firm type. It implies that 16 sample firms are state-owned enterprises, that 15 firms of the sample are foreign-owned enterprises or joint ventures, and that only 3 firms are collective firms, while a large number of 78 firms are private-owned enterprises.

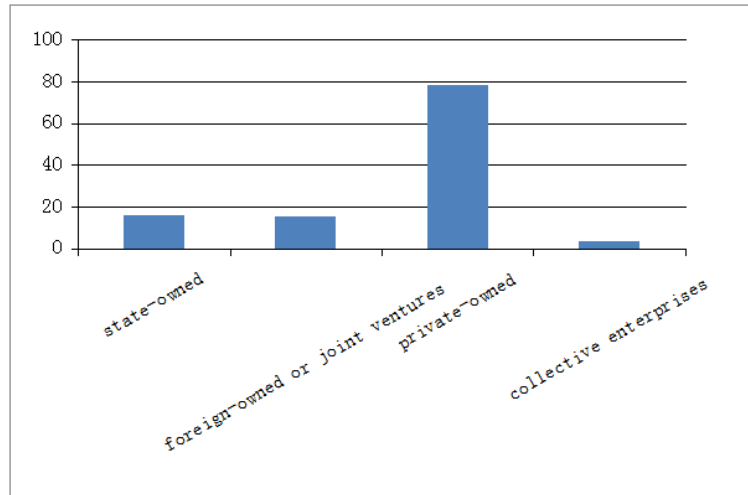


Figure 1 5 Distribution of sample firms by firm type

Figure 16 shows the distribution of sample firms by age of respondents. We can see from the figure that 36 respondents are less than 30 years old, and that other respondents are almost more than 30 years old and less than 60 years old.

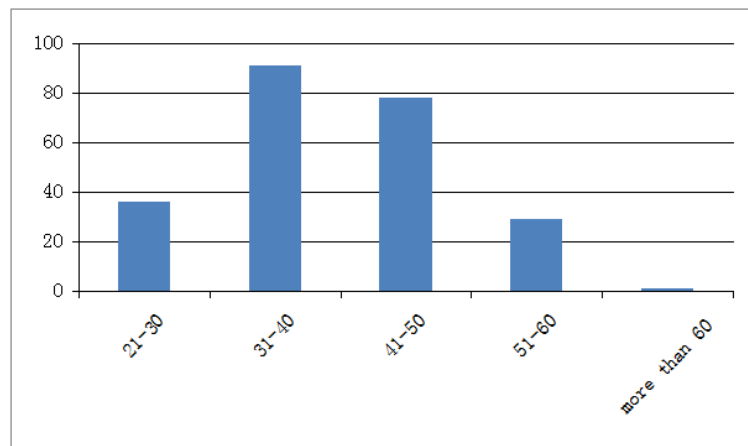


Figure 1 6 Distribution of sample firms by age of respondents

Figure 17 shows the distribution of sample firms by the tenure of respondents. It seems that the tenure of respondents is almost less than 5 years and only a few respondents have a current tenure more than 6 years.

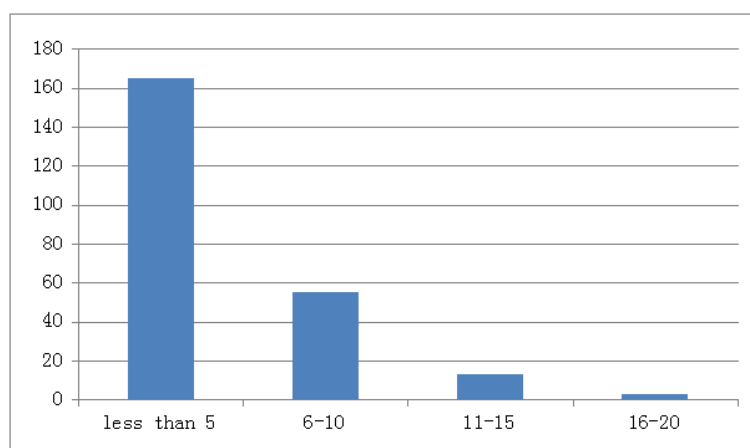


Figure 1 7 Distribution of sample firms by tenure of respondents

Figure 18 shows the distribution of sample firms by career experience of respondents. It means that a large proportion of the respondents have worked for more than 6 years.

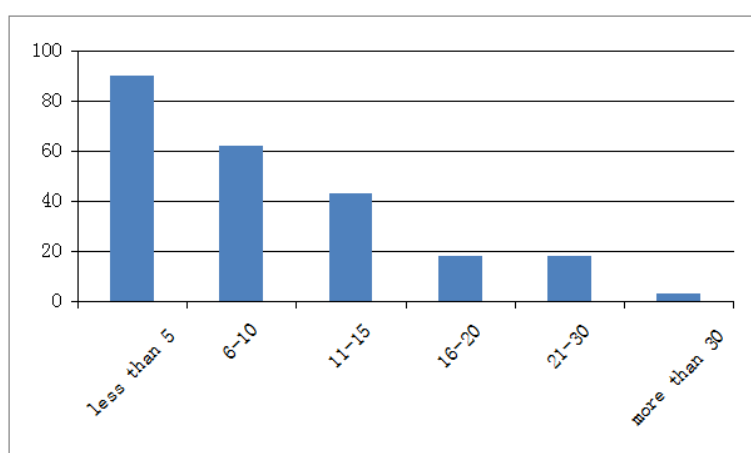


Figure 1 8 Distribution of sample firms by career experience of respondents

Figure 19 shows the distribution of sample firms by the number of patents. It shows that less than 10% sample firms have no patents yet. The most number of firms have 1-10 patents, and 7 firms have even more than 50 patents.

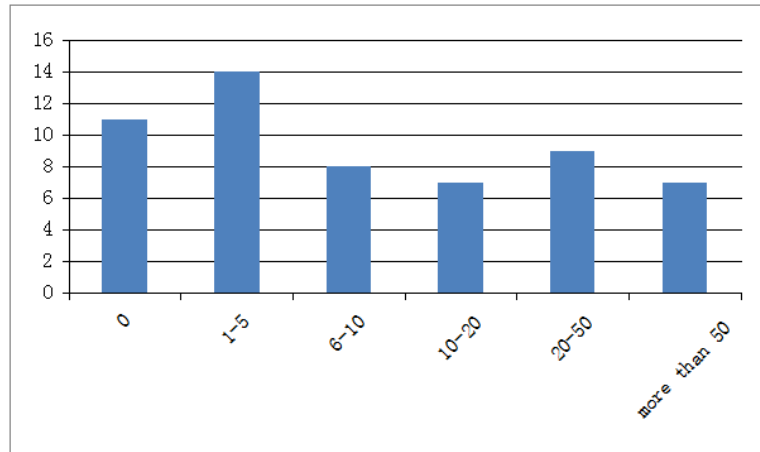


Figure 1 9 Distribution of sample firms by number of patents

Figure 20 shows the distribution of sample firms by the number of main alliance partners. It can be seen that approximately half of the sample firms have less than 10 main alliance partners, and others have more than 10 main alliance partners.

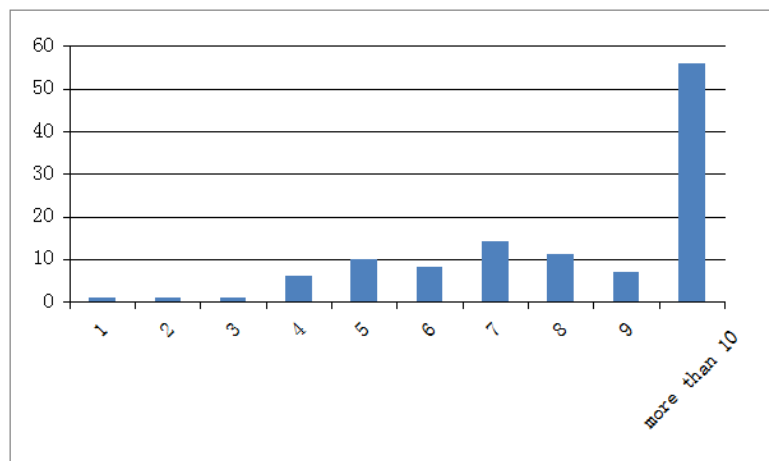


Figure 2 0 Distribution of sample firms by number of main alliance partners

Figure 21 shows the distribution of sample firms by firm location. The figure displays that the most proportion of sample firms are located in Shandong province. That is because Shandong province is rich in raw materials of tire manufacturing industry and thus almost 80% Chinese tire manufacturing firms gather in Shandong province.

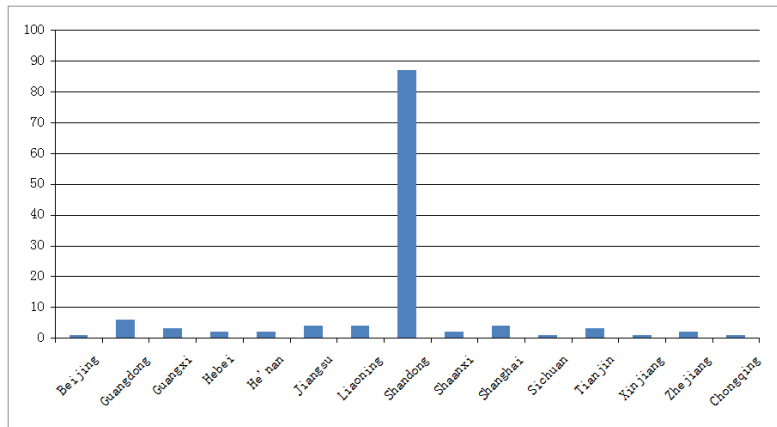


Figure 2 1 Distribution of sample firms by firm location

4.5 Variable specification

The scales in this study are all developed from prior studies (Table 4). All latent variables are measured by 7- point Likert scales, where 1 means the condition of the focal firm is completely inconsistent with the descriptions, and seven represents the condition conforms to the descriptions exactly.

Table 4 Scales and results of reliability and validity analyses

Variables	Items	Cronbach's α	Factor loading	AVE	C.R.
Customer orientation	1	0.928	0.783	0.740	0.945
	2		0.860		
	3		0.896		
	4		0.894		
	5		0.850		
	6		0.873		
Competitor orientation	1	0.858	0.882	0.707	0.906
	2		0.805		
	3		0.875		
	4		0.798		
Interfunctional coordination	1	0.869	0.837	0.665	0.908
	2		0.821		
	3		0.808		
	4		0.841		
	5		0.767		
Contractual governance	1	0.913	0.878	0.742	0.935
	2		0.903		
	3		0.852		
	4		0.883		
	5		0.786		
Trust governance	1	0.900	0.812	0.692	0.931
	2		0.862		
	3		0.771		
	4		0.835		
	5		0.859		
	6		0.848		
Radical innovation	1	0.887	0.888	0.749	0.923
	2		0.902		
	3		0.788		
	4		0.880		
Incremental innovation	1	0.853	0.736	0.545	0.893
	2		0.822		
	3		0.665		
	4		0.764		
	5		0.777		
	6		0.707		
	7		0.686		

4.5.1 Dependent and Independent variables

The measure of alliance governance includes measures of contractual governance and trust governance. The scale of contractual governance is derived from Li et al. (2010) and Li, Poppo and Zhou (2010), consisting of 5 items. The items

are: (1) The contract precisely defines the role/responsibilities of the partner and our firm. (2) We have customized agreements that detail the obligations of both parties. (3) We have specific, well-detailed agreements with this distributor. (4) The contract precisely states how each party is to perform in cooperation. (5) Generally, the contract is a primary mechanism to regulate the behavior of the partner in cooperation. The scale of trust governance is derived from Johnsen and Ford (2006) and Li, Poppo and Zhou (2010), consisting of 6 items. The items are: (1) This distributor is trustworthy. (2) This distributor has always been evenhanded in its negotiations with us. (3) We are not hesitant to transact with this distributor when the specifications are vague. (4) This distributor never uses opportunities that arise to profit at our expense. (5) We believe that this distributor will provide the help we need. (6) We believe that this distributor will finish the promise in time.

The measure of innovation includes measures of radical and incremental innovations. The scale of radical innovation is developed from Benner and Tushman (2003), consisting of 4 items. The items are: (1) In recent 3 years, we created radical new products. (2) In recent 3 years, we introduced radical new concepts. (3) In recent 3 years, we developed new technologies. (4) In recent 3 years, we created new techniques. The scale of incremental innovation is developed from Li et al. (2008), consisting of 7 items. The scale items are as following: (1) In recent 3 years, we exploited existing technologies. (2) In recent 3 years, we improved the existing process. (3) In recent 3 years, we used existing materials to produce. (4) In recent 3 years, we improved existing products. (5) In recent 3 years, we improved existing

product services. (6) In recent 3 years, we improved after-sales services. (7) In recent 3 years, we improved services to sell products.

Market orientation is measured by customer orientation, competitor orientation, and inter-functional coordination. These three scales are all derived from Li, Wei and Liu (2010), consisting of 6, 4, and 5 items respectively. The items for customer orientation are: (1) Our business objectives are driven primarily by customer satisfaction. (2) Our strategy for competitive advantage is based on our understanding of customers' needs. (3) We measure customer satisfaction systematically and frequently. (4) We give close attention to after-sales service. (5) We often look for measurements to increase customer value or decrease product cost. (6) We give close attention to the evaluation of customer on our product. The items for competitor orientation are as following: (1) Managers in this firm regularly share information about current and future competitors within the company. (2) Respond rapidly to competitors' actions. (3) We regularly collect and integrate information about the advantage and strategies of our competitors. (4) Compared with competitors, we have the higher advantage in target markets. The items for inter-functional coordination are: (1) We freely communicate information about our successful and unsuccessful customer experiences across all business functions. (2) All of our business functions (e.g. marketing/sales, manufacturing, R&D, finance/accounting, etc.) are integrated into serving the needs of our target markets. (3) All of our managers understand how everyone in our business can contribute to creating customer value. (4) Everyone knows the market information in our firm. (5) Employees from marketing department widely participate in new product

development projects. The questionnaire is shown in Appendix 1. And I provide an example of the questionnaire fulfilled in Chinese in Appendix 2.

4.5.2 Control variables

According to the conclusions of previous studies, we also control the models by adding eight control variables, i.e., firm size, firm type, industry category, firm age, resource environment, product advantage, production advantage, and marketing advantage. Firm size is measured by the number of employees. Firm type is coded as following: 1 = state-owned or state-held; 2 = foreign (wholly-owned or joint venture); 3 = private or individual; 4 = collective. Industry category is coded as: 1 = high-tech industry; 2 = non-tech industry. Firm age represents the number of years since the foundation to 2013. The scale of resource environment is developed from Desarbo et al. (2005) and Voss, Sirdeshmukh and Voss (2008), consisting of 6 items: (1) there is almost no external threat to the survival and development of our firm; (2) we have a good supply of capital in our market; (3) economic development plan provides strong support for our firm; (4) we are in a very profitable market; (5) our operating environment is full of threat; (6) it is easy to get resources we need to operate and expand in the market. The scales of product advantage, production advantage, and marketing advantages are all derived from Russo and Fouts (1997), consisting of 1 item respectively. The item measuring product advantage is: in the past 3 years, our advantages lie in launch speed of new products. The item measuring production advantage is: in the past 3 years, our advantages lie in the efficiency of production and organization. The item measuring marketing advantage is: in the past 3 years, our advantages lie in sales growth.

4.6 Estimation strategy

4.6.1 Reliability and validity

Results of reliability and convergent validity of the scales are shown in Table 4. In this study, Cronbach's α of all scales are more than 0.7 benchmarks, indicating good reliability. Most factor loadings of the factors are greater than 0.7 benchmarks, indicating that these items are reliable. In addition, the average variance extracted (AVE) of all variables is much larger than 0.5, and composite reliability (C.R.) is greater than 0.8, indicating that these measures are valid. Therefore, the convergent validity of the scales is good.

In terms of discriminant validity, as shown in Table 5, the square roots of AVE of all variables are all larger than the correlation coefficients in its own row and column respectively, which shows that the scales of this study meet the requirements of discriminant validity.

Table 5 Descriptive statistics and results of discriminant validity

* $p < 0.05$; ** $p < 0.01$; N = 122; The numbers in bold on the diagonal of correlation coefficient matrix are square roots of AVE.

Variables	Mean	S. D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1.Firm age	31.754	163.189	1														
2.Firm size	1175.260	1625.223	-0.033	1													
3.Firm type	2.610	0.764	0.026	-0.289**	1												
4.industry category	1.730	0.446	0.040	-0.480**	0.284**	1											
5.Resource environment	2.799	1.094	-0.126	-0.219*	0.018	0.159	1										
6.Product advantage	3.807	0.786	-0.039	0.074	0.092	0.074	0.262**	1									
7.Production advantage	3.971	0.742	-0.074	-0.034	0.308**	0.114	0.240**	0.536**	1								
8.market advantage	3.861	0.725	0.006	0.106	0.227*	0.010	0.147	0.601**	0.572**	1							
9.CuO	4.378	0.560	0.023	0.054	0.216*	0.148	0.187*	0.415**	0.519**	0.442**	0.860						
10.CoO	3.899	0.614	-0.031	-0.008	0.277**	0.201*	0.350**	0.504**	0.469**	0.552**	0.628**	0.841					
11.IC	3.967	0.609	0.014	0.020	0.285**	0.232*	0.254**	0.534**	0.512**	0.581**	0.710**	0.772**	0.815				
12.TG	4.109	0.541	-0.054	0.006	0.350**	0.246**	0.300**	0.444**	0.501**	0.441**	0.630**	0.677**	0.700**	0.832			
13.CG	3.993	0.572	-0.087	-0.013	0.093	0.138	0.303**	0.343**	0.359**	0.305**	0.611**	0.584**	0.568**	0.634**	0.861		
14.RI	3.826	0.677	-0.021	0.070	0.156	-0.006	0.339**	0.403**	0.454**	0.538**	0.353**	0.579**	0.574**	0.539**	0.407**	0.865	
15.II	4.177	0.627	0.068	0.022	0.148	0.206*	0.113	0.407**	0.368**	0.386**	0.503**	0.371**	0.536**	0.490**	0.368**	0.345**	0.738

4.6.2 Model estimation

To test the hypotheses, we used multivariate regression analyses in SPSS. In the first step, control variables are added into the model. In the second step, independent variables which have main effects on dependent variables are added into the models. In the last, all variables are added in the model. Models 1-4 justify the impacts of market orientation on alliance governance, which are described as hypotheses H1a, H1b, H2a, and H2b. Models 5-10 test the effects of alliance governance on innovation, which are described as hypotheses H3a, H3b, H4a, and H4b. In order to avoid possible multicollinearity problems, I mean-centered all variables prior to regression analyses.

4.7 Conclusion

The chapter explains the research methods used to analyze and examine the proposed research questions. Research methods are carried out to examine the following objectives:

- 1) To be able to provide a more comprehensive understanding and background of the structure and activities of Chinese manufacturing firms;
- 2) To examine whether there are any relationships between three dimensions of market orientation and alliance governance;
- 3) To examine whether there are any relationships between two dimensions of alliance governance and two types of innovation.

Each question requires a mix of qualitative and quantitative research methods to derive the appropriate conclusion. The qualitative method employed herein consists of literature review, expert interview, and firm interview, while the

quantitative method consists of a firm survey to collect related data. After data has been collected, the data analysis is then conducted using statistical methods to derive findings. The findings are presented in chapter 5.

Chapter 5 will present the case study of DC group using the qualitative method, while chapter 5 will do so on the statistical test to determine relationships among market orientation, alliance governance, and innovation.

CHAPTER 5: EMPIRICAL RESULTS

This chapter is concerned with a case study of the DC Group, the case study of 7 Chinese Chemical firms, and the statistical analysis results. The objective of this chapter is to both qualitatively and quantitatively explore the nature of market orientation, distributor governance, and innovation in Chinese manufacturing industries.

This chapter, aiming to test hypotheses we proposed on the relationship among market orientation, alliance governance, and innovation using data from marketing alliances formed by manufacturing firms and distributors in China, draws the following two conclusions: (1) Customer orientation and competitor orientation rather than inter-functional coordination will lead to contractual governance, and contractual governance will affect radical innovation in a U-shaped way. (2) Inter-functional coordination rather than customer orientation and competitor orientation will cause trust governance, and trust governance may boost both radical innovation and incremental innovation. These results suggest that firms committed to radical innovations should adopt strong contractual governance or trust governance in marketing alliance governance. Firms emphasizing on customer orientation and competitor orientation are likely to adopt strong contractual governance, while those focusing more on inter-functional coordination may adore trust. Furthermore, firms devoting themselves to incremental innovations only need to adopt strong trust

governance, and incremental innovation suits those pursuing inter-functional coordination more.

5.1 The case study of DC Group

DC Group's case is studied in this part in order to understand the relationship between market orientation and innovation in the real business context, which can support the framework of this study.

5.1.1 Company profile

(1) Background

DC Group is a famous automotive and transportation supporting enterprise in China. It started up in 1990 and changed its name to "DC Group Co., Ltd." in 2007. DC Group has two major tire bands, i.e., DC and Warrior. The main products of DC Group are all-steel radial truck tires, all-steel radial OTR tires, all-steel radial industrial tires, all-steel radial light truck tires, skew truck tires, skew light truck tires, and agricultural tires, etc. DC Group has import and export rights so that its products are sold abroad in more than 100 countries and regions, and the domestic market covers all provinces, municipalities and autonomous regions.

(2) Group size

The number of employees in all departments of DC Group is shown in Table 6.

Table 6 Employees of DC Group

Company name	Number of employees
DC Group (headquarter)	170
Including General manager's office	10
International trade department	21
Marketing department	19
Trade union	2
General affairs office	24
Human resource department	8
Administrative department	5
Financial assets department	22
Supply department	13
Audit and supervision department	5
Safety & environment protection department	4
Supply chain management department	10
Investment and development department	7
Tire software center	15
Administration office of CEO	2
Legal adviser office	3
Institution of tire	144
Other subsidiaries	9874
Total	10188

Note: Statistics by December 31th, 2012.

The scales of production of DC Group and the industry in the year 2010 to 2012 are shown in Table 7.

Table 7 Outputs and values of DC Group compared with industry

	2010	2011	2012
Output of DC (in thousand units)	6077	6291	6623
Output of industry (in thousand units)	70804	75323	78292
Output value of DC (in billion yuan)	7.157	8.541	9.127
Output value of industry (in billion yuan)	139.22	170.09	176.82
Domestic market share	6.9%	6.6%	6.7%

Source: Statistics of Chinese Tire Industry Association (CTIA).

(3) Products of DC Group

Conditions of DC Group's product lines are shown in Table 8.

Table 8 DC Group's production capacity (Unit: thousand units)

	Subsidiary 1	Subsidiary 2	Subsidiary 3
All-steel truck tire	2750	2750	2000
All-steel OTR tire	2	100	—
All-steel industrial tire	40	—	—

(4) Competitive status

DC Group has 6 main competitors. 3 of them are domestic firms, which

are Hangzhou Zhongce Rubber Co., Ltd., Aeolus Tyre Co., Ltd., and Jiangsu General Science Technology Co., Ltd.. The others are foreign firms, which are Bridgestone (China) Investment Co., Ltd., Hankook tire Co., Ltd., and Giti tire Co., Ltd.. The product portfolios of DC Group and these rivals are shown in Table 9. They are in the very intense competition that their product categories are all very complete.

Table 9 Product portfolios of DC Group and competitors

	All-steel truck tire	All-steel OTR tire	All-steel industrial tire
DC	√	√	√
Hangzhou Zhongce	√	√	√
Aeolus	√	√	√
Jiangsu general science technology	√	√	√
Bridgestone	√	√	√
Hankook	√	√	√
Giti	√	√	√

5.1.2 Innovation's role in DC Group

Since there were official and professional R&D departments in each subsidiary of DC Group, DC Group has been actively involved in developing new products, adopting new manufacturing techniques, and purchasing new machines to keep up with customer requirements since the establishment of the firm.

The crucial role of innovation in DC Group was emphasized by the group CEO during the interview:

“Innovation is a key for a firm like us to drive sustainable growth and to strengthen our position in a highly competitive tire market in China. My business philosophy is to make significant and true innovations to the traditional industry. Our organizational culture is to meet customers’ needs maximumly and efficiently through these innovations.”

As to the role of product innovation, DC Group introduced more than 80 new products into the marketplace between 2010 and 2012. Although most of them were old product improvements, they were relatively new to the industry and had never been introduced before by its rivals. Green tires, for example, were some of the new products developed by DC Group. Most of the innovations performed well in the marketplace and contributed a high impact on the increment of the firm’s profits. DC Group always takes two basic considerations into account before developing or launching any new products. All new products must create differentiated values, and serve customer needs. The CEO briefly explained the new product identification process during the interview:

“First, we receive customers’ feedbacks from our colleagues of the marketing department. Their valuable information always helps our product innovations. Second, we communicate with our distributors and get some important market information from their eyes. Then, we consider the market possibility (e.g. visiting local and internal tire exhibitions, reading international tire magazines, cooperating with some international tire manufacturers), followed by analyzing customer needs in detail (e.g. evaluating feedback

from customers on existing products). Moreover, we check the production capacity to make sure that the new product concepts are operationally achievable, before physically starting any new product projects. Finally, we design new products and produce some samples for testing. If the new products do not go through all tests, we will adjust and alter our design. We will alter the new products until they perform perfectly in the tests."

In conclusion, DC Group views innovation as a key role in the operation. Unlike some Chinese manufacturers aiming to gain competitive advantages by low prices, DC Group intends to compete with not only its domestic rivals but also the international competitors by making great efforts in innovations. Maybe this is why DC Group can be the leader in the Chinese tire industry.

5.1.3 Main challenges of DC Group in developing innovations

DC Group seems to have managed the challenges of innovation development well and has had good business strategies to support innovation initiatives. As we know, the tire is a kind of product which is different to innovate since it is in the high standard. However, DC Group depends on ultimate pursuing of customer value-added products and thus is always on the road of innovation. Moreover, while more and more competitors seem to compete in the marketplace by reducing their prices, DC Group continues to optimize the design and provide the best values to the customers, and charge proper prices at the same time.

Nevertheless, there were still two big challenges to developing innovations for the firm noted by the CEO during the interview. Externally, the limitation of technologies in the Chinese industry weakens DC Group's competitive capacity in the competition with international rivals. Although DC Group has leading

technologies in the Chinese tire industry, there are still relatively huge gaps between DC Group and large MNCs (multinational corporations). With Chinese government's encouragements of outward FDI, many large tire manufacturing firms have founded their China headquarters. Then, the weakness of DC Group's technology appears. DC Group always learns its international rivals' technologies by all means. However, technology is the main weakness of DC Group at present. Fortunately, DC Group has other advantages, such as low price, great understanding of Chinese tire market, and abundant experiences. In order to enhance its substantial competitive advantages, DC Group wants to make some radical innovations in its new product innovation.

Internally, the gradually increased diversification of customer needs is the other main hurdle to developing new innovations in DC Group. With the competition becoming intense, tire firms have to produce more new products to meet new customers in more detailed markets. Customized high-quality tires are really value-added products in the industry now. Customers requiring customized high-quality tires are not that sensitive to price. Thus, DC Group's lower prices relative to international tire firms are not advantages in this case. Moreover, international tire firms are especially skillful in the field of customization. DC Group launches many new products into the marketplace every year, but a large proportion of them perform poorly in the market. In order to reduce the failures of new products, DC Group intends to make more radical innovations by making sure whether a new product should be launched or not. To fulfill this, the CEO thinks that they should find some ways to get customer information more accurately.

5.1.4 Analysis of framework

(1) Variables

Market orientation. DC Group is a typical market-oriented enterprise. In detail, customer orientation and competitor orientation of DC Group are at a very high level, and inter-functional coordination is also high. DC Group's customer orientation and competitor orientation are manifested in frequent market meetings which help to obtain information about customers and competitors in order to discuss coping strategies. In 2012, DC Group held 9 market meetings, among which 8 meetings are related to the discussion of customer needs and competitor activities. The group held these meetings to develop effective strategies by listening to opinions of shareholders and distributors. Information about customers and competitors was collected by sales representatives and distributors from the market. In addition, there was often information sharing among the departments of DC Group in order to increase customer value and competitive advantages.

Distributor governance. DC Group establishes sales companies to manage its domestic distributors. The distribution of DC Group's sales companies is shown in Table 10.

Table 10 The distribution of DC Group's sales companies

Region	Province
Eastern China	Jiangsu, Zhejiang, Shanghai
Central China	Anhui, Henan, Hubei, Jiangxi
Southern China	Fujian, Guangdong, Guangxi, Hainan
Northern China	Beijing, Hebei, Shandong, Tianjin
Northwestern China	Gansu, Ningxia, Qinghai, Shanxi, Shaanxi, Xizang, Sinkiang
Southwestern China	Guizhou, Hunan, Sichuan, Yunnan, Chongqing
Northeastern China	Heilongjiang, Jilin, Liaoning, Inner Mongolia

Moreover, DC Group founds international trade departments specially in order to manage international distributors. Contact frequencies of DC Group with distributors are shown in Table 11.

Table 11 Distributor management of DC Group

Year	Number of distributors		Contact frequency (times/month)	
	Domestic	Abroad	Domestic	Abroad
2010	103	42	>2 face-to-face; >10 by calls and emails	>20 by emails
2011	119	48	>2 face-to-face; >10 by calls and emails	>20 by emails
2012	138	53	>2 face-to-face; >10 by calls and emails	>20 by emails

Innovation. Innovations of DC Group from 2010 to 2012 is shown in Table 12.

Table 12 Innovations of DC Group (2010-2012)

Year	Total number of NP	Number of old product improvement	Number of new-to-the-world products	Share-increased old product improvement	Profitable new-to-the-world products	Defective new-to-the-world products
2010	24	20	4	0	4	0
2011	29	23	6	0	5	1
2012	27	21	6	0	6	0

For a further understanding of DC Group's new product innovation, new product innovation can also be classified into two kinds, i.e., NPD due to market feedback, and NPD due to technological advances (shown in Table 13).

Table 13 Market- and tech-based NPD of DC (2010-2012)

Year	Market-based NPD		Tech-based NPD	
	Share-increased	Share-decreased	Profitable	Defective
2010	100%	0	80%	20%
2011	100%	0		
2012	100%	0		

In fact, new-to-the-world products or tech-based new product innovations are radical innovations, while old product improvements or market-based new product innovations are incremental innovations. Table 13 shows that DC Group's innovations are mostly incremental innovations.

(2) Framework support

DC Group is a firm with a strong market orientation. Meanwhile, it pays great attention to new product innovation because of its leadership status in the industry. DC Group attaches great importance to gather market information in two ways, i.e., receiving customer feedback and understanding competitors' products, prices and services directly by sales representatives, and collecting customer feedback and competitor activities indirectly by distributors. In addition, feedback-based new products have accounted for about 95% of all new products in the recent 3 years, indicating that DC Group's market orientation has indeed played an important role in new product innovations. However, due to the two important routes to obtain market feedback, the influence of market orientation on new product innovation cannot be direct. DC Group enhanced the relational embeddedness, resource

sharing, and joint problem solving with distributors in order to acquire market feedback from distributors. This practice supports the hypotheses that distributor governance plays as a mediator in the MO-innovation linkage in this research. In summary, the case study of DC Group provides empirical evidence for the conceptual framework of this research.

5.2 Results of multi-case interview

Because of my focus on new product innovation, I surveyed firms in a relatively narrow set of manufacturing sectors. Although service firms may develop new products as well, most of them pay all their attention to better service. In view of time and cost, I chose 7 Chemical firms in Shanghai to collect the data. Overall, 14 top managers at 7 Chemical firms (a CEO and a CTO at every firm) were interviewed in 2013.

5.2.1 Company feature

Distribution of the sample by industry and firm characteristics is shown in Table 14. 7 firms are from the chemical industry. Among them, 3 of them are basic chemical raw materials manufacturing enterprises, and 4 of them are specialty chemical manufacturing companies. In addition, these firms are classified according to the firm characteristic, i.e., firm age, firm size, industry status, and domestic market share. It seems that these firms are almost all leading companies in their fields no matter their size.

Table 14 Distribution of the multi-case samples

Industry		Firm age		Firm size (employees)		Industry status		Domestic market share	
		<30 y	>30 y	<1000	>1000	Leader	Follower	<30%	>30%
Chemical industry	Basic chemical raw materials manufacturing	1	2	2	1	3	0	2	1
	Specialty chemicals manufacturing	1	3	4	0	3	1	1	3
Total N=7 firms interviewed		2	5	6	1	6	1	3	4

5.2.2 Analysis of framework

In the face-to-face interviews, I first asked their levels of market orientation and new product innovation. Then, I encouraged them to tell me the reasons for the success (failure) of new product innovation. Not surprisingly, almost all the CEOs and CTOs paid much attention to two activities, i.e., the processing of market information, and the control of distributors. They explained that they had to understand the market, especially customer needs and competitor activities, when they intended to develop some new products adapting to the market. And their major means to understand the market were two ways, that are direct contacts with the market by their own marketing employees, and indirect contacts through distributors. Therefore, they deemed that both proper governances of distribution and firms' information acquisition and sharing are important. Their conversations preliminarily showed the causal link that distributor governance acted as a mediator

in the MO-innovation linkage. In the next stage, I led them to talk about their firms' levels of distributor governance. Table 15 shows the levels of market orientation, distributor governance, and innovation of these chemical firms.

Table 15 Levels of the variables by firm

	Market orientation			Distributor governance		Innovation	
	CuO	CoO	IC	CG	TG	RI	II
Firm 1	H	H	H	H	H	M	M
Firm 2	M	H	L	H	M	H	H
Firm 3	M	M	H	L	H	M	M
Firm 4	M	H	M	H	M	M	H
Firm 5	H	H	M	H	M	H	M
Firm 6	H	M	M	M	M	L	L
Firm 7	M	M	L	H	L	M	M

“CuO” stands for customer orientation; “CoO” stands for competitor orientation; “IC” stands for inter-functional coordination;

“CG” stands for contractual governance; “TG” stands for trust governance;

“RI” stands for radical innovation; “II” stands for incremental innovation.

“H” stands for High; “M” stands for Medium; “L” stands for Low.

Overall, these 7 companies are highly different in market orientation. I found that they can be differentiated into three categories. Firm 1, 3, 4, 5, and 6 are in the first class, three dimensions of market orientation of which are all relatively high. Firm 7 is in the second class, three dimensions of the market orientation of which are all relatively low. Firm 2 is in the other class, the inter-functional coordination of which is very low in spite of its relatively high customer orientation and competitor orientation. Through detailed research, I find that these three types of firms show

different characteristics in distributor governance and new product innovation. They may be two typical contexts in the real business environment.

Typical context 1 (Firm 1 as an example): Firm 1 is a famous paint manufacturer in China, which is a leader in the industry. Customer orientation, competitor orientation, and inter-functional coordination of firm 1 are all high. As the interview shows, firm 1 not only proactively obtains market feedback but also makes effective communications and cooperation among the departments. The CEO tells me that employees of market department contact with customers, understand their demands, and deal with their complaints directly. If the complaints of customers are in the technical area, they will ask colleagues of R&D department to solve jointly. As a result, firm 1 makes many improvements in its product in order to meet customer needs every year. In addition, once competitors develop new formulas, employees of R&D department can quickly obtain valid information from their colleagues of the market department. Because of this, they stay at a top technological level in the industry. Meanwhile, in order to develop more successful new products, firm 1 makes great efforts by keeping the contractual relationship with distributors and sharing resources with them also.

Typical context 2 (firm 7 as an example): Firm 7 is a leading acrylic acid manufacturer in China. Its customer orientation, competitor orientation, and inter-functional coordination are all relatively low. This is because the techniques of producing acrylic acid are quite mature so that researchers usually cannot obtain information about new technologies from marketing members. Therefore, firm 7

develops new products mainly based on improvements of old products in the past 3 years. Moreover, the CEO of firm 7 thinks that strengthening relations with distributors is more effective than constraining them by contracts due to the homogeneity of products in the market. However, trust governance of firm 7 is very low at present. Maybe that is the reason why its radical and incremental innovations are both at a medium level.

Typical context 3 (firm 2 as an example): Firm 2 is a leading reagent manufacturer in China. Although firm 2 is both relatively highly customer-oriented and competitor-oriented, its inter-functional coordination is very low. Moreover, the trust governance of distributor is not that high as contractual governance in firm 2. However, firm 2 develops both high radical and incremental new product innovations in the past 3 years.

By collating the data of interviews with 14 CEOs and CTOs at 7 firms, I find that the data not only strongly support the causal links between the variables as the research framework suggested, but also provide qualitative evidence for the magnitudes and directions of the relationship among the variables. As shown in Table 15 and 16, customer orientation and competitor orientation have the stronger positive relationship with contractual governance, while inter-functional coordination has the stronger positive relationship with trust governance. In addition, trust governance has the strong positive relationship with both radical and incremental innovation. While radical innovation can be high when contractual governance is high or low, incremental innovation can be low when contractual

governance is high or low. These findings provide sufficient qualitative evidence for our hypotheses.

Table 16 Qualitative relationship between variables

	Distributor governance		Innovation	
	Trust	Contractual	Radical	Increment
Customer orientation				
Customer commitment	–	+	+	+
Customer needs understanding	–	+	+	+
Customer satisfaction	+	+	–	+
After-sales service	+	+	–	+
Competitor orientation				
Competitor information sharing	+	+	+	+
Responding speed	–	+	–	+
Competitors' strategy discussion		+	–	+
Grasp chances for competitive	–	+	+	+
Inter-functional coordination				
Inter-functional customer needs	+		+	+
Inter-functional information sharing	+	–	+	+
Strategic functional integration		–		–
Inter-functional resource sharing	+		+	+

“+” means positive relationship; “–” means negative relationship.

The preliminary results show that organizational learning and distributor governance may mediate the relationship between market orientation and new product innovation. But it remains for a further analysis based on the large sample in order to confirm the arguments.

5.3 The statistic results of questionnaire survey

To test the hypotheses, we used multivariate regression analyses in SPSS.

Models 1-4 justify the impacts of market orientation on alliance governance, which are described as hypotheses H1a, H1b, H1c, H2a, H2b, and H2c. Models 5-10 test the effects of alliance governance on innovation, which are described as hypotheses H3a, H3b, H4a, and H4b. In order to avoid possible multicollinearity problems, we mean-centered all independent variables prior to regression analyses. Table 17 and Table 18 show the results of regression analyses. The maximum VIF of all models is 3.499, indicating that multicollinearity does not constitute a serious problem. All models are significant at $p < 0.001$, with adjusted R^2 from 0.183 to 0.578.

5.3.1 Market orientation and Distributor governance

Table 17 shows the regression results of testing hypotheses on the relationship between market orientation and distributor governance.

Table 17 Results of regression analyses

Variables	Contractual governance		Trust governance	
	Model 1	Model 2	Model 3	Model 4
Control variables				
Firm size	0.046	-0.091	0.196*	0.085
Firm type	-0.013	-0.104	0.230**	0.149*
Industry category	0.086	-0.073	0.219*	0.086
Firm age	-0.041	-0.084	-0.010	-0.041
Resource environment	0.215*	0.076	0.201*	0.088
Product advantage	0.124	0.007	0.158	0.054
Production advantage	0.252*	0.016	0.262**	0.105
Marketing advantage	0.049	-0.115	0.108	-0.044
Independent variables				
Customer orientation (CuO)		0.387**		0.176
Competitor orientation (CoO)		0.247*		0.197
Interfunctional coordination (IC)		0.209		0.288*
F value	4.071***	8.722***	11.369***	14.722***
Adjusted R ²	0.183	0.436	0.430	0.578
Δ Adjusted R ²		0.253		0.148

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; N = 122.

Model 2 shows that the effect of customer orientation on contractual governance ($\beta = 0.387$, $p < 0.01$) and the effect of competitor orientation on contractual governance ($\beta = 0.247$, $p < 0.05$) are statistically significant, however, the effect of inter-functional coordination on contractual governance is not statistically significant ($\beta = 0.209$, $p > 0.05$), supporting H1a, H1b, and H1c. On the contrary, Model 4 shows that the impact of inter-functional coordination on trust governance ($\beta = 0.288$, $p < 0.05$) is statistically significant, while the impact of customer orientation on trust governance ($\beta = 0.176$, $p > 0.01$) and the impact of competitor orientation on trust governance ($\beta = 0.197$, $p > 0.05$) are not statistically significant,

supporting H2a, H2b, and H2c. Since the influences of customer orientation and competitor orientation on trust governance are not significant while their impacts on contractual governance are significant, it indicates that the impacts of customer orientation and competitor orientation on contractual governance are stronger than their impacts on trust governance. In addition, the effect of inter-functional coordination on trust governance is significant but its impact on contractual governance is not significant, indicating that inter-functional coordination influences trust governance more than contractual governance.

5.3.2 Distributor governance and Innovation

Table 18 shows the regression results of testing hypotheses on the relationship between distributor governance and innovation.

Table 18 Results of regression analyses

Variables	Radical innovation			Incremental innovation		
	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
Control variables						
Firm size	0.093	0.020	0.067	0.151	0.088	0.079
Firm type	0.058	-0.024	-0.020	0.021	-0.044	-0.045
Industry category	-0.076	-0.158	-0.126	0.291**	0.215*	0.209*
Firm age	0.035	0.041	0.056	0.079	0.088	0.085
Resource environment	0.285**	0.204*	0.240**	0.036	-0.053	-0.060
Product advantage	-0.005	-0.066	-0.076	0.208	0.145	0.147
Production advantage	0.186	0.081	0.111	0.047	-0.064	-0.070
Marketing advantage	0.374**	0.333**	0.290**	0.196	0.158	0.166
Independent variables						
Contractual governance (CG)		0.041	0.113		0.139	0.125
Trust governance (TG)		0.359**	0.367**		0.291*	0.289*
Squared CG			0.222**			-0.043
F value	8.564***	9.268***	9.709***	4.512***	5.319***	4.817***
Adjusted R ²	0.355	0.429	0.466	0.203	0.282	0.276
Δ Adjusted R ²		0.074	0.111		0.079	0.073

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; N = 122.

Model 7 shows trust governance has a significant positive effect on radical innovation ($\beta = 0.367$, $p < 0.01$), supporting H3b. Meanwhile, model 7 also shows the square of contractual governance is positively related to radical innovation ($\beta = 0.222$, $p < 0.01$), suggesting that contractual governance affects radical innovation in a U-shaped way, supporting H3a. Model 10 shows trust governance has significant positive effect on incremental innovation ($\beta = 0.289$, $p < 0.05$), supporting H4b. In

addition, model 10 also shows the square of contractual governance is not significantly related to incremental innovation ($\beta = -0.043$, $p > 0.05$), refusing H4a.

5.3.3 Summary of Hypotheses tests

As our results show above, our hypotheses are mostly supported. Table 19 is a summary of the hypotheses tests.

Table 19 Summary of hypotheses tests

Hypotheses	Statements	Results (support: \checkmark ; reject: \times)
H1a	Contractual governance (CG) will increase when customer orientation (CuO) becomes higher.	\checkmark
H1b	Contractual governance (CG) will increase when competitor orientation (CoO) becomes higher.	\checkmark
H1c	Inter-functional coordination (IC) has no effect on Contractual governance (CG).	\checkmark
H2a	Customer orientation (CuO) has no effect on Trust governance (TG).	\checkmark
H2b	Competitor orientation (CoO) has no effect on Trust governance (TG).	\checkmark
H2c	Trust governance (TG) will increase when inter-functional coordination (IC) becomes higher.	\checkmark
H3a	Contractual governance has a U-shaped effect on radical innovation.	\checkmark
H3b	Trust governance positively influences radical innovation.	\checkmark
H4a	Contractual governance had an inverted U-shaped effect on incremental innovation.	\times
H4b	Trust governance positively influences incremental innovation.	\checkmark

Table 19 shows that all hypotheses except H4a are supported, which reflects that the theories we use and the linkage among market orientation, distributor governance, and innovation we build are proper.

5.4 Conclusion

This chapter has revealed the results of the case study of DC Group, the case study of 7 Chinese Chemical firms, and the statistical analysis results. All these results demonstrate our conceptual framework.

First, the case study of DC Group qualitatively proves that distributor governance should be the missing link between market orientation and innovation.

Second, the multi-case study of 7 Chinese Chemical firms reveals not only that distributor governance may be the mediating mechanism of the relationship between market orientation and innovation, but also the potential influence of market orientation on distributor governance and the impact of distributor governance on innovation.

Third, the statistical analyses based on 122 Chinese manufacturing firms provide evidence to all our hypotheses except H4b. That is to say, we can draw the following two conclusions: (1) Customer orientation and competitor orientation rather than inter-functional coordination will lead to contractual governance, and contractual governance will affect radical innovation in a U-shaped way. (2) Inter-functional coordination rather than customer orientation and competitor orientation will cause trust governance, and trust governance may boost both radical innovation and incremental innovation.

These results suggest that firms committed to radical innovations should adopt strong contractual governance or trust governance in marketing alliance governance. Firms emphasizing on customer orientation and competitor orientation are likely to adopt strong contractual governance, while those focusing more on inter-functional coordination may adore trust. Furthermore, firms devoting themselves to incremental innovations only need to adopt strong trust governance, and incremental innovation suits those pursuing inter-functional coordination more.

CHAPTER 6: RESEARCH CONCLUSION AND DISCUSSION

This chapter, as the end of the thesis, draws the conclusion to the research and makes the proper discussion about the results. According to the statistic results, this study draws two conclusions: (1) Customer orientation and competitor orientation rather than inter-functional coordination will lead to contractual governance, and contractual governance will affect radical innovation in a U-shaped way. (2) Inter-functional coordination rather than customer orientation and competitor orientation will cause trust governance, and trust governance may boost both radical innovation and incremental innovation. Then, the next part of this chapter points out the contributions of this research that it sheds light on market orientation's indirect impact on innovation, and directs Chinese manufacturers' innovation practices. In the last, I figure out several future research directions which are remained to be explored.

6.1 Discussion of research findings

This study has explored the relationships between market orientation, alliance governance, and innovation in marketing alliances formed by manufacturing firms and distributors in China. We have identified and tested the mediating role of alliance governance as a mechanism to explain the relationship between market orientation and innovation. Two conclusions are drawn from the results. (1) High levels of customer orientation and competitor orientation lead to increases in contractual governance, and contractual governance will affect radical innovation in a U-shaped way. Existing research only demonstrates the promoting effect of market

orientation on alliance governance (Wang, Li and Xie, 2011; Liu, Zhao and Li, 2010), but does not explore the effects of the three dimensions of market orientation on alliance governance. This research goes further and finds more instructive results. In addition, Liu, Zhao and Li (2010) propose that contractual governance is a mediator in the link between market orientation and knowledge acquisition, but do not analyze the mediating effect of contractual governance in the relationship between market orientation and innovation further. This study analyses the specific effect of contractual governance on a particular type of innovation, i.e. radical innovation. (2) A high level of inter-functional coordination will increase trust governance, which then leads to an increase in both radical and incremental innovation.

This study, based on the comparison of different effects of dimensions of market orientation on alliance governance, further clarifies the positive role of trust governance on innovation, which confirms our result that alliance governance is a mediating variable and the mechanism by which market orientation influences innovation. These results suggest that firms committed to radical innovations should adopt strong contractual governance or trust governance. Firms that focus on customer orientation and competitor orientation are likely to adopt strong contractual governance, while those focusing more on inter-functional coordination are more likely to develop trust-based governance. Firms that wish to develop incremental innovations only should adopt strong trust governance, and incremental innovation is also likely to result in those firms that actively pursue an inter-functional coordination.

In the context of innovative practices of firms in China, market orientation is always an important strategy to achieve innovations regardless of alliance governance patterns and type of innovation. However, the results and framework shown in Figure 10 demonstrate that there are important differences in how best to achieve innovation in terms of the type of market orientation adopted and the choice of type of alliance governance.

6.2 Theoretical contributions

In this study, from the perspective of the distributor alliance governance, this paper proposes a market orientation —Alliance governance —Innovation mediating relationship chains. On the one hand, the research enriches the literature on the relationship between market orientation and innovation. On the other hand, this study reveals the important role of alliance governance in the market-oriented corporates. This helps to further clarify the puzzle about the relationship between market orientation and innovation in the existing literature. In the first chapter, I mentioned the existing studies about the relationship between the market orientation and innovation can be divided into five streams. Wherein the third intermediary stream is the genre that the impact of market orientation on innovation is not direct, but through some important mediating mechanisms. And through my lessons learned in business management practice, I found that companies' alliance governance may be the key for market-oriented enterprises to obtain innovation success. In this direction, I raised my hypotheses and research model.

My research's contributions may be both theoretical and practical. This research contributes to the literature in four significant ways. First, I contribute to the

market orientation literature by enriching the studies on consequences of market orientation. There are a large number of outcome variables of market orientation in the existing market orientation research, such as firm performance, organizational learning, knowledge acquisition, corporate culture, corporate governance, etc.. however, there are very few studies exploring the effect of market orientation on alliance governance. According to Kohli and Wendy's (2007) study, compared to non-market-oriented enterprises, market-oriented enterprises will be different in all aspects of business decision making, so as to achieve the goal of a market-oriented enterprise. Moreover, the decision-making of alliance governance is critical for firms' performance in the process of cooperation with distributors. Thus, the impact of market orientation on the distributor alliance governance has a very important theoretical significance.

Second, this research contributes to the innovation literature by finding meaningful antecedents of innovation. In business practice, most companies (especially manufacturers) attach great importance to innovation. This is because studies have found innovative successful enterprises can significantly perform better than other non-innovative companies. This result has also been very much confirmed in the management literature. For example, Tylor, Sun, and Li (1998), based on data analysis of pharmaceutical companies in Indonesia, find that companies developing more types of new medicines have significant better firm performance than firms creating fewer types of new medicines. Hammor and Dali (2010) also find that the more the number of patents German companies acquired, the better performance they achieved. This conclusion is also supported by much

economics literature. Therefore, what factors affect the company's innovation has become a very important issue in the academia. In this study, from the perspective of alliance governance, this paper proposes that alliance governance may be an important factor to affect firms' innovation. The results of this study also provided important support for the hypotheses. That is because studies have shown that a very important factor in deciding enterprises' innovation success is knowledge acquisition. The distributor alliance is a critical source of gaining access to external knowledge. By choosing governance mechanisms of the alliances, firms can determine their different knowledge acquisition and thus affect their own different way of innovation.

Third, I find out alliance governance as the middle mechanism between market orientation and innovation. This is my most important contribution to the literature in this study. This study follows the third stream of the research on the relationship between market orientation and innovation, and identifies a very important intermediate mediator in the market orientation-innovation chain: Alliance governance. It has been rare in the existing literature to recognize alliance governance as an intermediating mechanism in the relationship between market orientation and innovation. It has been the most to identify organizational learning as the mediating variable in the market orientation-innovation linkage. Of course, organizational learning plays an important role in the knowledge acquisition and innovation process. However, the organizational learning process is often a process which is difficult to control in the business. Different from organizational learning, distributor alliance governance is easier for companies to choose and control, and by

doing this they can determine their own knowledge acquired, so as to promote innovation. Therefore, identifying the distributor alliance governance as a mediating mechanism in the relationship between market orientation and innovation has very important significance.

Fourth, the relationships among various dimensions of market orientation, alliance governance, and innovation are unfolded. This study not only proposes a complete theoretical framework of market orientation-alliance governance-innovation, but also enriches the theoretical framework by studying clearly the complex relationship among different dimensions of market-orientation, distributor alliance governance, and innovation. As a result, this study will fill in the research gaps in the existing research. Most of the existing studies view market orientation, alliance governance, and innovation as single concepts, so the applicability of their research results is greatly limited. By analyzing market orientation, alliance governance, and innovation into different subdivisions, we have obtained the very clear relationship among customer orientation, competitor orientation, and inter-functional coordination, and contractual governance, trust governance, and the relationship among contractual governance, trust governance, and incremental innovation, radical innovation. This has further enriched the literature of market orientation theory, alliance governance literature, as well as the literature of innovation theory.

6.3 Management implications

These empirical analyses provide help for better selection and management of innovation. These results show that the different types of technological innovation

are influenced by the market orientation of the enterprises. Different market-oriented enterprises have different tendencies in the choice of innovation. In the process of managing innovation, the alliance governance mode for different innovation types is different, and different market-oriented enterprises emphasize on different types of alliance governance as well. In this way, it is shown that the different market orientations of the firms affect the way of corporate innovation and the management of innovation. From the empirical analysis, we further prove the necessity that we study innovation management from the perspective of different market orientation and alliance governance.

In terms of the different effect of market orientation on alliance governance, the results show that customer-oriented and competitor-oriented firms focus more on the use of contract governance approach. As the customer-oriented and competitor-oriented enterprises pay more attention to the acquisition of external information and knowledge, and the contract management approach can provide the enterprise with better access to the market information through distributors that are closer to the market and consumers, and thus contract governance is frequently used by customer-oriented and Competitor-oriented enterprises. The results also show that there is a positive relationship between inter-functional coordination and trust governance. This is consistent with our hypothesis because such companies are more inclined to show partners in the cooperation with great trust. The results of these analyses show that under the transitional economy of China, customer-oriented and competitor-oriented enterprises need to use contract governance to

innovate, and firms with high-level inter-functional coordination focus more on trust management in the way of innovation management.

From the perspective of alliance governance and innovation, the results show that trust governance has a strong effect on both radical innovation and incremental innovation, and there is a U-shaped relationship between contract governance and radical innovation. These results show that radical innovation requires the entire enterprise to manage and gather the entire enterprise's resources, capabilities, and the in-depth of cooperation with distributors to reduce risk because the investments in radical innovation are important and risky. Moreover, trust governance also helps enterprises' progressive improvements on the existing products and processes.

Furthermore, this study may contribute to the management practices. First, firms can choose their types of alliance governance according to their innovation goals. These results suggest that firms committed to radical innovations should adopt strong contractual governance or trust governance. Firms that focus on customer orientation and competitor orientation are likely to adopt strong contractual governance, while those focusing more on inter-functional coordination are more likely to develop trust-based governance. Firms that wish to develop incremental innovations only should adopt strong trust governance, and incremental innovation is also likely to result in those firms that actively pursue an inter-functional coordination.

In addition, managers may adjust their firms' market orientation when they want to achieve a specific type of innovations. Business managers can make

decisions based on our findings. For example, when companies want to achieve incremental innovation, you can take more trust governance on their distributor alliance partners. And this kind of companies can invest more efforts in inter-functional coordination. When companies want to achieve more breakthrough innovations, if they are willing to take a formal contract governance on the distributor alliance partners, they should try to refine the terms of the contracts so as to make the contractual governance up to a high level. Such a path to achieve radical innovation is suitable for market-oriented enterprises with a high level of customer orientation or competitor orientation. Another path to achieve radical innovations which is suitable for market-oriented firms with a higher level of inter-functional coordination is that firms take a high level of trust governance on their distributor alliance partners, and thus they can achieve radical innovations.

6.4 Research limitations and future research directions

This study makes some important contributions to theory and practice, and it is based on a large empirical sample. However, there are some limitations that should be explained: (1) there are two separate organizations involved in an alliance and data were only collected from the manufacturer perspective. The results may, therefore, be biased by respondents' subjective judgments from the manufacturer perspective only. Further research may draw more reliable conclusions if data are obtained from both manufacturers and distributors. (2) This study identifies barely that alliance governance is a middle mechanism in the relationship between market orientation and innovation, but it does not demonstrate the mediating effect of

alliance governance. Further research may explore the strength of mediating effect of alliance governance. If the results show that alliance governance will not fully mediate the relationship between market orientation and innovation, then business practices will be further guided when other mediators are identified. (3) It is cautioned that the generalizability of this research may be limited, primarily because this research is conducted in the unique context of manufacturing industry in China. Therefore, application of the findings may be limited to other countries. Generalizability of the findings across all industries in China may also be debatable. The particularity of the research setting limits the generalizability of the findings to markedly different samples, given the competitive, environmental, and cultural differences that exist between industries and countries. Thus, future research may test the generalizability of findings of this research by using samples from different industries and countries.

6.5 Conclusion

This study focuses on the research question: what is the missing link between market orientation and innovation? In Chapter 1, I provide an outline of the research, including research background, research questions and strategy, thesis structure, research findings and main arguments, and main contributions. In the research background section, I discuss the developing situation of Chinese manufacturers and their difficulties in innovation. Then I figure out the research gaps between market orientation and innovation by reviewing the several main streams in the literature on market orientation and innovation. In the research

questions and strategy section, I focus my research question on the missing link between market orientation and innovation, and develop my research strategy. In the thesis structure section, I make a brief introduction to the structure. Then, in the research findings section, I briefly report the statistic results supporting our hypotheses, which imply that distributor governance is the mediating mechanism between market orientation and innovation. Furthermore, I represent the main contributions that this thesis will make to the market orientation and innovation literature, which is depicted in detail in chapter 6.

In Chapter 2, I aim to review and have a better understanding of theories and literature relevant to this research. It contains five parts. The first part of this chapter reviews the theory and literature on market orientation. The second part of the chapter then focuses on a review of the theory and literature on innovation. This part provides us with a better understanding of the definition and classifications of innovation. Furthermore, in the third part, the literature on the relationship between market orientation and innovation is reviewed. In this part, import papers on this topic are analyzed and help us find out the appropriate key research direction for this thesis. The fourth part exactly follows the third part and reviews the theory and literature on alliance governance. Finally, a conclusion pointing out the limitations of existing literature and further research directions is drawn at the end of the chapter.

Chapter 3 is about hypothesis development. First, I propose my conceptual framework which makes distributor governance as the mediating mechanism between market orientation and innovation according to the research gaps I have discussed in chapter 1. Second, hypotheses, which are about the relationship among

variables are justified by the literature, are raised. Following the classic literature, I divided market orientation into three dimensions, i.e., customer orientation, competitor orientation, and inter-functional coordination. Distributor governance is divided into two dimensions, i.e., contractual governance, and trust governance. Moreover, innovation is divided into two dimensions as well, that is, incremental innovation, and radical innovation. I hypothesize the relationship between market orientation and distributor governance, and the relationship between distributor governance and innovation, respectively.

In Chapter 4, I elaborate on the research design employed in this study, including the rationale for the selection of such a method. Specifically, it explains why the selected research methodology is appropriate for this thesis and how it has been implemented in light of the research questions. Moreover, this chapter illustrates data collection techniques selected in accordance with the chosen research method, so that my research questions can be answered adequately. As mentioned in chapter 3, my hypotheses argue that the effect of market orientation on innovation could not be direct but indirect via alliance governance. Consequently, the research design methodology that can appropriately answer the specific research questions proposed in chapter 1 has to involve both qualitative and quantitative methods. The qualitative research method gathers the required data and information using literature review, expert interview and semi-structured firm interview designed to help examine and provide a better understanding of the nature, characteristics, roles, and activities of each typical firm, as well as the relationships between market orientation and innovation. Thereafter, the quantitative method is employed, using a

survey to verify and confirm the findings obtained from the qualitative research stage. The following sections elaborate on the reason why the mixed research paradigm of qualitative and quantitative methods is the most appropriate research tool to use to answer my proposed research questions and explain which data collection technique should be used for each research method to gather the information and data needed to help test my hypotheses.

Chapter 5 is concerned with a case study of the DC Group, the case study of 7 Chinese Chemical firms, and the statistical analysis results. The objective of this chapter is to both qualitatively and quantitatively explore the nature of market orientation, distributor governance, and innovation in Chinese manufacturing industries. This chapter, aiming to test hypotheses we proposed on the relationship among market orientation, alliance governance, and innovation using data from marketing alliances formed by manufacturing firms and distributors in China, draws the following two conclusions: (1) Customer orientation and competitor orientation rather than inter-functional coordination will lead to contractual governance, and contractual governance will affect radical innovation in a U-shaped way. (2) Inter-functional coordination rather than customer orientation and competitor orientation will cause trust governance, and trust governance may boost both radical innovation and incremental innovation. These results suggest that firms committed to radical innovations should adopt strong contractual governance or trust governance in marketing alliance governance. Firms emphasizing on customer orientation and competitor orientation are likely to adopt strong contractual governance, while those focusing more on inter-functional coordination may adore trust. Furthermore, firms

devoting themselves to incremental innovations only need to adopt strong trust governance, and incremental innovation suits those pursuing inter-functional coordination more.

Chapter 6, as the end of the thesis, draws the conclusion to the research and makes the proper discussion about the results. According to the statistic results, this study draws two conclusions: (1) Customer orientation and competitor orientation rather than inter-functional coordination will lead to contractual governance, and contractual governance will affect radical innovation in a U-shaped way. (2) Inter-functional coordination rather than customer orientation and competitor orientation will cause trust governance, and trust governance may boost both radical innovation and incremental innovation. Then, the next part of this chapter points out the contributions of this research that it sheds light on market orientation's indirect impact on innovation, and directs Chinese manufacturers' innovation practices. In the last, I figure out several future research directions which are remained to be explored.

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APPENDIX 1 THE QUESTIONNAIRE OF FACE-TO-FACE FIRM SURVEY

001 Company:	002 Tel:
Respondent information	003 Years of working in this firm: _____year(s); Years of being in current position: _____year(s)
	004 Duty: ①CEO or general manager; ②Top manager; ③Middle manager
	005 Age: ①21-30; ②31-40; ③41-50; ④51-60; ⑤more than 60
	006 Education: ①high school or below; ②undergraduate; ③graduate or above

Firm basic information	007 Time of foundation: ____; Number of employees: ____
	008 Firm type: ①state-owned or state-held; ② foreign (wholly-owned or joint venture); ③ private or individual; ④ collective
	009 Industry category as high-tech industry: ①Yes; ②No

Please read the statements below, and choose to what extent you agree or disagree.

1=totally disagree, 2=mostly disagree, 3=a little disagree, 4=neither agree or disagree, 5=a little agree, 6= mostly agree, 7=totally agree.

In terms of firm's resource environment:							
1) There is almost no external threat to the survival and development of our firm.	1	2	3	4	5	6	7
2) We have a good supply of capital in our market.	1	2	3	4	5	6	7
3) Economic development plan provides strong support for our firm.	1	2	3	4	5	6	7
4) We are in a very profitable market.	1	2	3	4	5	6	7
5) Our operating environment is full of threat.	1	2	3	4	5	6	7
6) It is easy to get resources we need to operate and expand in the market.	1	2	3	4	5	6	7
In terms of firm's advantages:							
1) In the past 3 years, our advantages lie in launch speed of new products.	1	2	3	4	5	6	7
2) In the past 3 years, our advantages lie in efficiency of production and organization.	1	2	3	4	5	6	7
3) In the past 3 years, our advantages lie in sales growth.	1	2	3	4	5	6	7
In terms of customer service:							
1) Our business objectives are driven primarily by customer satisfaction.	1	2	3	4	5	6	7
2) Our strategy for competitive advantage is based on our understanding of customers' needs.	1	2	3	4	5	6	7
3) We measure customer satisfaction systematically and frequently.	1	2	3	4	5	6	7

4) We give close attention to after-sales service.	1	2	3	4	5	6	7
5) We often look for measurements to increase customer value or decrease product cost.	1	2	3	4	5	6	7
6) We give close attention to the evaluation of customer on our product.	1	2	3	4	5	6	7
In terms of competition:							
1) Managers in this firm regularly share information about current and future competitors within the company.	1	2	3	4	5	6	7
2) Respond rapidly to competitors' actions.	1	2	3	4	5	6	7
3) We regularly collect and integrate information about the advantage and strategies of our competitors.	1	2	3	4	5	6	7
4) Compared with competitors, we have higher advantage in target markets.	1	2	3	4	5	6	7
In terms of cooperation:							
1) We freely communicate information about our successful and unsuccessful customer experiences across all business functions.	1	2	3	4	5	6	7
2) All of our business functions (e.g. marketing/sales, manufacturing, R&D, finance/accounting, etc.) are integrated in serving the needs of our target markets.	1	2	3	4	5	6	7
3) All of our managers understand how everyone in our business can contribute to creating customer value.	1	2	3	4	5	6	7
4) Everyone knows the market information in our firm.	1	2	3	4	5	6	7
5) Employees from marketing department widely participate in new product development projects.	1	2	3	4	5	6	7
Think about your firm's contract with the most important distributor:							
1) The contract precisely defines the role/responsibilities of the partner and our firm.	1	2	3	4	5	6	7
2) We have customized agreements that detail the obligations of both parties.	1	2	3	4	5	6	7
3) We have specific, well-detailed agreements with this distributor.	1	2	3	4	5	6	7
4) The contract precisely states how each party is to perform in cooperation.	1	2	3	4	5	6	7
5) Generally, the contract is a primary mechanism to regulate the behavior of the partner in cooperation.	1	2	3	4	5	6	7
Think about your firm's most important distributor:							
1) This distributor is trustworthy.	1	2	3	4	5	6	7
2) This distributor has always been evenhanded in its negotiations with us.	1	2	3	4	5	6	7

3) We are not hesitant to transact with this distributor when the specifications are vague.	1	2	3	4	5	6	7
4) This distributor never uses opportunities that arise to profit at our expense.	1	2	3	4	5	6	7
5) We believe that this distributor will provide help we need.	1	2	3	4	5	6	7
6) We believe that this distributor will finish the promise in time.	1	2	3	4	5	6	7
In terms of improving products:							
1) In recent 3 years, we created radical new products.	1	2	3	4	5	6	7
2) In recent 3 years, we introduced radical new concepts.	1	2	3	4	5	6	7
3) In recent 3 years, we developed new technologies.	1	2	3	4	5	6	7
4) In recent 3 years, we created new techniques.	1	2	3	4	5	6	7
In terms of changing processes:							
1) In recent 3 years, we exploited existing technologies.	1	2	3	4	5	6	7
2) In recent 3 years, we improved existing process.	1	2	3	4	5	6	7
3) In recent 3 years, we used existing materials to produce.	1	2	3	4	5	6	7
4) In recent 3 years, we improved existing products.	1	2	3	4	5	6	7
5) In recent 3 years, we improved existing product services.	1	2	3	4	5	6	7
6) In recent 3 years, we improved after-sales services.	1	2	3	4	5	6	7
7) In recent 3 years, we improved services to sell products.	1	2	3	4	5	6	7

APPENDIX 2 AN EXAMPLE OF THE QUESTIONNAIRE FULFILLED IN CHINESE

001 企业名称:	002 电话: 0571-3611113
被访问人信息	003 在本企业工作年限: 14 年; 任现职年限: 8 年
	004 职务: ①CEO 或总经理; ②高层管理者; ③中层管理者
	005 年龄: ①21-30; ②31-40; ③41-50; ④51-60; ⑤60 岁以上
	006 文化程度: ①本科以下; ②本科; ③研究生及以上

企业基本信息	007 本公司创建于 1983 年; 公司员工总数 1100 人。
	008 公司类型: ①国有或国有控股; ②外资、独资或合资; ③民营或个体; ④集体企业
	009 公司是否为高新技术产业: ①是; ②否

请阅读以下描述, 根据你对该描述的同意程度进行回答。(1=完全不同意; 2=非常不同意; 3=轻微不同意; 4=无法回答; 5=轻微同意; 6=非常同意; 7=完全同意)

关于企业的资源:							
1) 企业的生存和发展几乎没有面临外部的威胁	1	2	3	4	5	6	7
2) 我们所处的市场中拥有充足的资本供给	1	2	3	4	5	6	7
3) 经济发展规划为企业提供了有力的支持	1	2	3	4	5	6	7
4) 我们所处的市场中拥有丰厚的获利机会	1	2	3	4	5	6	7
5) 我们所处的运营环境充满各种威胁	1	2	3	4	5	6	7
6) 在市场中可以容易的获得运营和扩张所需的资源	1	2	3	4	5	6	7
关于企业的竞争优势:							
1) 在过去3年, 我们的主要竞争优势是产品优势	1	2	3	4	5	6	7
2) 在过去3年, 我们的主要竞争优势是生产优势	1	2	3	4	5	6	7
3) 在过去3年, 我们的主要竞争优势是营销优势	1	2	3	4	5	6	7
在客户服务方面,							
1) 十分注重顾客满意	1	2	3	4	5	6	7
2) 竞争优势是建立在对顾客需求的了解之上的	1	2	3	4	5	6	7
3) 经常系统地衡量顾客的满意程度	1	2	3	4	5	6	7
4) 十分重视产品的售后服务	1	2	3	4	5	6	7
5) 经常寻求为顾客增加价值或者降低成本	1	2	3	4	5	6	7
6) 我们密切关注客户对产品的评价	1	2	3	4	5	6	7
在竞争方面,							
1) 公司内部, 共享有关竞争者战略的信息	1	2	3	4	5	6	7
2) 对竞争者的威胁行动, 予以快速的反击	1	2	3	4	5	6	7
3) 管理人员经常讨论竞争者的优势和战略	1	2	3	4	5	6	7
4) 相对竞争对手而言, 我们在目标顾客群中, 拥有相对优势	1	2	3	4	5	6	7
在内部合作方面,							
1) 在各个部门之间交流与顾客交往的经验	1	2	3	4	5	6	7
2) 所有的部门一起工作来服务共同的顾客	1	2	3	4	5	6	7

3) 所有部门都清楚员工在为顾客创造更高价值中做出了贡献	1	2	3	4	5	6	7
4) 每一个员工都知道有关市场方面的信息	1	2	3	4	5	6	7
5) 营销人员广泛地参与了新产品的开发	1	2	3	4	5	6	7
对于我公司与最重要经销商的合同,							
1) 合同详细地规定了双方的角色和责任	1	2	3	4	5	6	7
2) 合同有定制化的条款来细化双方的义务	1	2	3	4	5	6	7
3) 我们和经销商有非常详尽的合同	1	2	3	4	5	6	7
4) 合同详细规定了双方在合作中如何表现	1	2	3	4	5	6	7
5) 总的来说, 合同是我们管理与经销商合作关系的主要手段	1	2	3	4	5	6	7
对于我公司最重要的经销商,							
1) 经销商是值得信任的	1	2	3	4	5	6	7
2) 经销商在谈判中表现得非常公平	1	2	3	4	5	6	7
3) 当合作细节比较模糊时, 我们不会犹豫是否和经销商合作	1	2	3	4	5	6	7
4) 经销商不会投机性地以我方代价换取自身的利益	1	2	3	4	5	6	7
5) 我们相信在我方需要的时候, 经销商会提供帮助	1	2	3	4	5	6	7
6) 我们相信经销商会及时履行承诺	1	2	3	4	5	6	7
公司的产品创新情况:							
1) 在过去三年, 我们开发了全新的产品	1	2	3	4	5	6	7
2) 在过去三年, 我们引进了全新的生产理念	1	2	3	4	5	6	7
3) 在过去三年, 我们开发了全新的技术	1	2	3	4	5	6	7
4) 在过去三年, 我们创造了全新的技术	1	2	3	4	5	6	7
在改进生产流程方面:							
1) 在过去三年, 我们应用了现有的新技术	1	2	3	4	5	6	7
2) 在过去三年, 我们改进了现有生产流程	1	2	3	4	5	6	7
3) 在过去三年, 我们着重于用现有原材料进行生产	1	2	3	4	5	6	7
4) 在过去三年, 我们着重于在现有产品基础上进行改进	1	2	3	4	5	6	7
5) 在过去三年, 我们着重于改进现有产品和服务	1	2	3	4	5	6	7
6) 在过去三年, 我们改进了售后服务	1	2	3	4	5	6	7
7) 在过去三年, 我们改进了产品的销售服务	1	2	3	4	5	6	7

APPENDIX 3 MY PUBLICATION

Li, Y.*, **Chen, Y.**, Li, Y., Holland, C. P. forthcoming. Market orientation, alliance governance and innovation. *Journal of Global Information Management*. (Accepted)