

# **Market Orientation, Product Innovation and Export Performance: Evidence from Chinese**

## **Manufacturers**

### **Abstract:**

Based on Resource-Based View, this study examines the impact of marketing-related resource (market orientation) and innovation-related resources (innovation orientation and innovation resources) on exporters' performance (new product performance and overall export performance), as well as moderating role of environmental turbulence in the market orientation and export performance link. This questionnaire survey conducted among 220 manufacturing exporters reveal that there exist positive relationships among the constructs in question. In addition, technological turbulence positively moderates the link between market orientation and export performance, while market turbulence and competitive intensity do not play moderating role significantly. We conclude by discussing our contributions, the implications, and possible future extensions. This research departs from the majority of past research investigating the relationship among market orientation, product innovation and business performance in three aspects: (1) It examines the dynamism how market orientation improves new product performance and export performance through innovation orientation and innovation resources based on RVB; (2) It distinguishes among three constructs involved in product innovation activity; (3) It extends the research from domestic markets to export markets.

### **Key words:**

Market orientation; Product innovation; Export performance

In past three decades, China's export trade has always been developing at a surprisingly high speed. Now, it becomes the number one country in terms of export trade volume. However, what have been widely acknowledged as the main advantages for Chinese manufacturers in world market competition are low-cost input factors such as cheap labors and raw materials. Many Chinese manufacturing exporters have to tackle with the great pressure arising from domestic currency appreciation, technical trade barriers, global market depression, hypercompetitive market environment and high rate of domestic inflation. In this context, figuring out antecedents of export performance will be especially valuable to Chinese exporters.

In the export performance research field, market orientation has received increasing attention as a potential determinant of export success (Cadogan et al., 2009). Researchers have explored the relationship between the extent to which exporters adopt and implement market orientation and export performance (e.g., Murray et al., 2007; Racela et al., 2007). Still, most market orientation studies are focused on domestic market, and researches about market-oriented export behavior have not fully provided understanding about how market orientation drives export success. Therefore, researchers have called for more research into how exporters' market orientation influences export success (Murray et al., 2007).

Market orientation represents business culture (Narver and Slater, 1990) or business behavior (Kohli and Jaworski, 1990) that leads to superior performance partially because it encourages innovation activities (Langerak et al., 2004) and innovation is an important contributor to the business performance. Therefore, positive mediating effect of product innovation in the market orientation-business performance link is frequently hypothesized and empirically supported in

many studies in marketing literature (eg. Langerak et al., 2004).

However, there are still some theoretical gaps in the discussion of market orientation-product innovation-business performance link that need to be further addressed.

Firstly, recent studies argued that the impact of market orientation upon firm's new product performance and overall business performance could be explained by Resource-Based View (RBV) (eg. Olavarrieta and Friedmann, 2008; Snoj et al., 2007). Optimal proactive deployment of organizational resources facilitates sustainable competitive advantage, potentially leading to superior long-term organizational performance. The benefits of developing and exploiting resources have been much considered in the strategic management literature (Barney, 1991; Day, 1994; Wernerfelt, 1984), but the attention given to Resource-Based Theory (RBT) in the marketing literature has been inadequate (Sonj et al., 2007) and the growing theoretical and conceptual work on marketing resources such as market orientation is not mirrored in empirical investigations (Hooley et al., 2005).

Secondly, although market orientation has often been shown to have strong link with the success of firms' innovative efforts (eg. Baker and Sinkula, 2002; Merrilees et al., 2011), some researchers have raised doubts on the positive impact of market orientation upon product innovation. For example, it is suggested that being market oriented may detract from innovativeness and may lead to myopic research and development (R&D) (Christensen and Bower, 1996; Berthon et al., 1999; Akman and Yilmaz, 2008). Therefore, further evidence, especially empirical data from transitional economy, is needed to clarify the relationship between market orientation and product innovation.

Thirdly, some scholars confused innovation orientation with innovation capability. Actually, Woodside (2004) pointed out a conceptual flaw in how Hult et al. (2004) conceived of the innovation process for they incorrectly suggested that innovation orientation was equivalent to the capacity to introduce innovations. Some authors even simply regarded innovation as one single construct. For example, Calantone et al. (2002) measured firm innovation orientation both from the openness to new ideas as an aspect of a firm's culture and outcome of product innovation activities including speed and rate of product introduction. A more common case is that many studies in market orientation-innovation-business performance link tended to interpret innovation from single perspective. For example, Baker and Sinkula (2002) examined the role of market orientation in improving product innovation performance, while Keskin (2006) explored the impact of market orientation on firm's innovation orientation.

Finally, although market orientation has recently received increasing attention as one potential determinant of export success (eg. Sousa et al., 2008; Cadogan et al. 2009), most studies probing into the mediating effect of innovation in the market orientation and business performance link are focused on domestic markets.

Given the above-mentioned theoretical gaps, this paper tries to examine the relationship among market orientation, product innovation and business performance in exporting activities. Specifically, we distinguish among three distinct constructs (ie. innovation orientation, innovation resources and product innovation performance) that are related with product innovation, and then examine whether the relationship between market-oriented export behavior and export performance is mediated by product innovation. Our approach to theory development is grounded on the

Resource-Based View (RBV) of the firm, in which market orientation is viewed as a marketing-related resource, and innovation orientation and innovation resources are viewed as innovation-related resources. We believe that marketing-related resource can improve innovation-related resources, and then helps exporters achieve satisfactory product innovation performance and finally gain superior export performance. This conceptual framework is developed as a synthesis of previous conceptual contributions, in particular, building from the work on marketing capabilities by Day (1994), market-based assets by Srivastava et al. (1998) and marketing resources by Hooley et al. (2005), and integrating it with the growing literature on market orientation and its impact on performance. In addition, based on contingency theory, our study also probes into moderating effect of external environment turbulence in the market orientation and export performance link.

In doing so, our study contributes to the market orientation, product innovation and export performance literature in the following four aspects. Firstly, by viewing market orientation, innovation orientation and innovation resources as critical company resources, we examine the Resource-Based Theory in the field of export marketing and innovation strategies. Secondly, unlike previous literature that often treats innovation as a single construct, our study divides product innovation process into three distinct but related constructs. In doing so, we try to fill the significant gap in understanding the mechanism how market orientation drives innovation and finally contributes to organizational performance. Thirdly, by using the samples of Chinese manufacturing exporters, we find that market orientation can improve product innovation and finally facilitate export performance. Our results are consistent with the most research findings reported in Western

settings, and may add another evidence to clarify inconsistent findings about market orientation and product innovation link. Finally, we extend the studies about market orientation-innovation-performance link from domestic market to export market, so as to add new knowledge for export market-oriented activities and export performance research, which is especially of great value to manufacturing exporters who are eager to gain superior export performance through innovative products.

## **THEORETICAL BACKGROUND AND CONCEPTUAL MODEL**

### **Resource-Based View (RBV)**

We choose Resource-Based View (RBV) as the analytical framework of our conceptual model development. RBV assumes that each firm is a collection of key resources and capabilities that determine a firm's strategy. The organization can use these resources to exercise its strategic intent. Barney (1991) defined resources as a bundle of assets, capabilities, and organizational processes, firm attributes, information, and knowledge. Not all resources, however, are likely to be of equal importance in creating competitive advantage. Resources with the potential to create competitive advantage have at least four characteristics: (1) they help the company to exploit opportunities and/or neutralize threats, (2) they are rare among current and potential competitors, (3) they are difficult for competitors to obtain or imitate, and (4) they do not have substitutes (Barney, 1991). Within the RBV, sustainability of competitive advantage is seen to be achieved through the deployment of isolating mechanisms to protect the advantage from imitation. Typical isolating mechanisms include causal ambiguity, complexity, tacitness, path dependency, economics, and legal

barriers (Reed and DeFillippi, 1990).

Strategic orientations are potentially significant advantage-generating resources, for they exhibit many of the characteristics of isolating mechanisms noted above. Orientation takes time to build (is path dependent), is complex, is built out of tacit skills and experience, and is difficult if not impossible to transfer from one firm to another. Managers operating in one firm may be less effective if taken out of that firm and into a competitor operation with a different embedded orientation. Two critical strategic orientations often cited by literature from both the strategic management and marketing disciplines are market orientation and innovation orientation.

Specifically, market orientation has been proposed as a key differentiating resource that is closely related to overall performance (Narver and Slater, 1990), for it is idiosyncratic to the firm, creates value in the marketplace, has been built over time with heavy reliance on tacit knowledge and skills, and involves complex interrelationships with other resources, all theoretically important factors in creating sustainable competitive advantage. In addition, innovation-related resources are among the three kinds of intangible resources presented by Grant (1991). In our study, we focus on product innovation, which is “new products or services introduced to meet an external user or market need”(Damanpour, 1991). Zmud (1982) distinguished between the initiation and implementation stages of the adoption of innovations. Following Zmud’s approach, we further distinguish among three constructs associated with product innovation. They are innovation orientation, resources commitment in product innovation and product innovation performance. From a collective perspective, innovation orientation is defined as openness to new ideas as an aspect of a firm’s culture (Hurley and Hult, 1998), and it reflects the organization’s willingness to

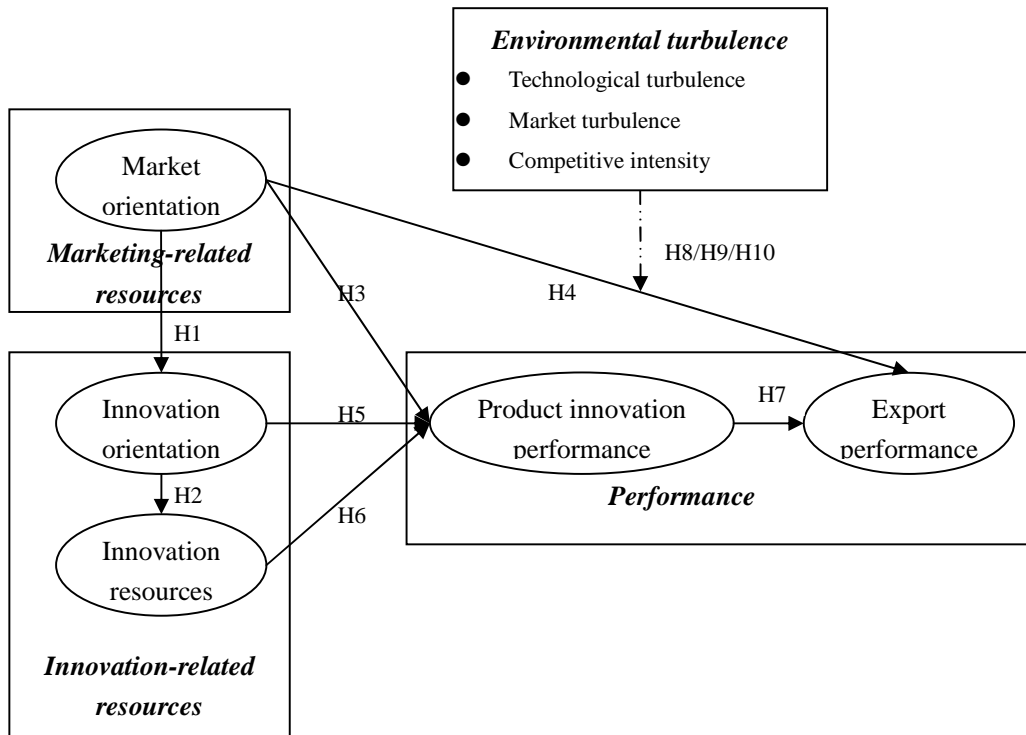
innovate its offerings. Innovation resources refer to the actual investment activities while implementing innovation strategy, and product innovation performance is the outcome and consequence of innovation activity. Obviously, these three constructs are interrelated but quite different concepts, and innovation orientation and innovation resources can be considered as innovation-related resources.

Several recent studies explored the dynamics how market orientation drives business performance from the perspective of RBV. Hooley et al. (2005) found that marketing support resources (including market orientation and managerial capabilities) can improve market –based resources (including customer linking, market innovation, human resource and reputational assets), and finally improve business performance. Snoj et al. (2007) investigated how market orientation positively impacts market performance and financial performance indirectly through innovation resources and reputational resources, but they measured innovation resources by using only two items from the perspective of overall innovation capability. Olavarrieta and Friedmann (2008) argued that the impact of a market-oriented culture upon overall business performance may be mediated by other important intangible (e.g., knowledge-related) resources. Merrilees et al. (2011) explored how market orientation leads to better SME performance by improving two key marketing capabilities namely branding and innovation. However, what are missing from their discussion are product innovation-related resources, which will be considered in our research.

## **Conceptual Framework**



**Figure 1 Conceptual Model**



The conceptual framework, as shown in Figure 1, specifies the relationships across the building blocks in this study: marketing-related resource (market orientation), innovation-related resources (innovation orientation and innovation resources) and performance outcome (product innovation performance and export performance). It is proposed here that market orientation as one kind of marketing-related resource can improve firm’s innovation-related resources (including innovation orientation and innovation resources). These three kinds of company resources will lead to superior new product performance, and superior new product performance subsequently affects organizational performance. Market orientation also is hypothesized to have a direct influence on export performance, because a market-oriented culture can also influence the proficiency in other marketing activities (i.e., pricing, distribution, and promotion) and other innovation activities (i.e.,

process innovation and administrative innovation) besides the new product development activities. What's more, environmental turbulence (including technological turbulence, market turbulence and competitive intensity) is believed to moderate the total effect of market orientation upon export performance. From theoretical perspective, this model provides a more complete understanding of the impact of market orientation on organizational performance in export setting based on the RBV framework.

## **RESEARCH HYPOTHESES**

### **Marketing-related resource and innovation-related resources**

Two perspectives of the conceptualization and measurement of market orientation have gained wide acceptance in the literature. The first, developed by Narver and Slater (1990), argued that a market orientation is the organizational culture “that most effectively and efficiently creates the necessary behaviors for the creation of superior value for buyers and, thus, continuous superior performance for the business”, and considers that market orientation embraces three components: customer orientation, competitor orientation and interfunctional coordination. The second perspective was proposed by Kohli and Jaworski (1990) who defined a market orientation as “an organization-wide generation of market intelligence pertaining to current and future customer needs, dissemination of intelligence across departments, and organization-wide responsiveness to it”. In our research model, we adopt the cultural perspective of market orientation as defined by Narver and Slater (1990).

Market orientation of the organization has been proposed as a key differentiating marketing

resource and a key predictor of firm performance (Hooley et al., 2005; Atuahene-Gima et al., 2005), for it satisfies four primary characteristics of competitive advantage generating resources. Firstly, it is valuable. As Day (1994) argued, market-oriented firms are able to outperform competitors due to their ability to better learn about customers and competition, and identify opportunities in present and prospective markets. Secondly, it is rare. According to Narver et al. (1998), the difficulty in replicating the market-oriented culture explains why we do not see a large number of companies creating and maintaining a market orientation. Thirdly, it is inimitable. Market orientation is seen as a deeply embedded cultural facet of firms (Hunt and Morgan, 1995). In other words, a market orientation enables a firm to outperform its competitors based upon causal ambiguity. A market-oriented firm is surprisingly complex. Gebhardt et al. (2006) suggested that to become market oriented involves several interdependent changes at the individual, group and organization levels that occur over several years. A market-oriented firm has tacit knowledge, which means that the relationship between actions and results is unclear. And finally, it is non-substitutable, because a market-oriented firm possesses what Williamson (1985) describes as asset specificity, which refers to “durable investments that are undertaken in support of particular transactions” (Williamson, 1985, p. 55).

Companies may also develop resources in the field of innovation. Hurley and Hult (1998) introduced two constructs of innovation: innovation orientation and the capacity to innovate. Innovation orientation reflects the openness to new ideas and is an aspect of organizational culture. When combined with resources and other organizational characteristics, innovation orientation creates a greater “capacity to innovate” (Hurley and Hult, 1998). The capacity to innovate indicates

the ability of an organization to successfully accept and implement new ideas, processes, or products. As mentioned previously, this study further identifies three constructs involved in product innovation. They are innovation orientation, innovation resources and innovation performance. The first two constructs should belong to company resources.

Positive relationship between market orientation and innovation orientation are often presented and empirically supported by literature (eg. Han et al., 1998; Keskin, 2006). First of all, Kahn (2001) found a positive relationship between customer orientation and innovation orientation of the firm. Firms committed to provide high value to the customer are inclined towards innovation (Deshpande et al., 1993). They are interested in a long-term view rather than short-term profits. Innovations represent a long-term investment. Therefore, it is not surprising that customer-oriented firms are more innovative than firms which are not customer-oriented (Han et al., 1998). Secondly, competitor-oriented firms define and analyze competitors' activities and strategies, and develop suitable responses to competitor activities (Gatignon and Xuereb, 1997). Competitor orientation comprises being better and more different from competitors. Also, this can be only provided by innovations, so competitor-oriented culture facilitates a innovation-oriented culture (Han et al., 1998). Thirdly, according to Han et al. (1998), organization members are generally confronted with some uncertainties about innovations. These uncertainties are caused by lack of rules and procedures. At such situations, interfunctional co-ordination provides linkage between different functional units, and it serves as a bridge to decrease insecurity and conflicts. In this manner, it increases mutual trust and dependency among people that work on different functions (Olson et al., 1995) and, what's more, provides an open environment to innovative ideas. Therefore, building on

extant literature, it is hypothesized that:

*Hypothesis1: The extent of market orientation is positively related to firms' innovation orientation.*

Firm's innovation orientation "implies a firm being proactive by exploring new opportunities rather than merely exploiting current strengths" (Menguc and Auh, 2006) and, therefore, it is regarded as essential to an innovative effort capable of exceeding the customer's expectations. To be more specific, firms oriented towards innovation value change, and encourage risk-taking and creativity, making employees feel less threatened when risking efforts into new areas. They continually search the marketplace for new products, services and technologies. They tend to invest more heavily in research and development as well as in marketing and promotion. They also focus more on new opportunity and product development. An innovation-oriented firm allocates more financial resource to R&D, employs high qualified personnel and creates an organizational culture that supports learning and creativity (Ritter and Gemünden, 2002).

Damanpour (1991), in a meta-analysis, concluded that attitude towards change is systematically related to the introduction of innovations. Zaltman et al. (1973) suggested that there are two stages of innovation: initiation and implementation. A critical element of the initiation stage is the openness and willingness to innovate (Hurley and Hult, 1998), and during the stage of implementation, resources commitment is a prerequisite. Leskovaar-Spacapan and Bastic (2007) believed that organizations with innovation orientation continually look for new opportunities, are more likely to engage in innovation, and are consequently more likely to attain higher level of innovation capability. Therefore, we have:

*Hypothesis2: The extent of innovation orientation is positively related to innovation resources commitment in product innovation.*

### **Company resources and product innovation performance**

Among company resources, market orientation is believed by the literature to be connected with firms' new product performance in three major ways. First, the conventional wisdom among marketers is that customers should be the driving force and potential sources for product innovation. It is therefore no surprise that, for the past three years or so, the new product development process has relied heavily on customer input to evaluate a product innovation's viability, design and positioning (Day, 1994). Second, competitor orientation can help an organization to identify competitive opportunities, emerging substitutes, the speed with which substitute technologies will disseminate, and the timing of technological shifts (Zahra et al., 1995). This information can be incorporated into planning R&D, determining the timing of market entry, and selecting an appropriate positioning for a new product (Bozic, 2006). Thirdly, market orientation involves close and effective cross-functional cooperation and fosters communication, collaboration, cohesiveness, trust and commitment between different functional areas (Auh and Menguc, 2005), and this is claimed to play a mechanism role that provides all departments of a firm to work jointly (Gatignon and Xuereb, 1997). This mechanism influences positively the innovative capability of the firm by enabling all functions to behave together, also, in this way, forming a suitable condition for innovation. Additionally, selling a new technology requires inter-functional collaboration to solve technical and market issues and to achieve speed (Zahra et al., 1995).

In empirical studies, Baker and Sinkula (2005) reported the results of empirical research on the relationship between market orientation and new product success and found that support for a positive market orientation–new product success relationship is nearly unanimous. What’s more, according to meta-analysis of the evidence on the determinants of new product performance by Henard and Szymanski (2001) and Pattikawa et al. (2002), market orientation is found to have significantly positive relationship with new product performance. The average correlations between market orientation and new product performance are 0.48 and 0.36 respectively. Therefore, we propose that:

*Hypothesis3: The extent of market orientation is positively related to product innovation performance.*

The market orientation literature provides evidence that a market-oriented culture can be an important determinant of business performance, because by tracking and responding to customer needs and preferences, market-oriented firms can better satisfy customers and reach superior financial performance. Specifically, researchers generally found the positive relationship between the extent to which exporters adopt and implement market orientation and export performance (e.g., Murray et al., 2007; Racela et al., 2007). However, a number of studies have found mixed results between market orientation and firm performance measures (Langerak, 2003). In addition, some authors claimed that market orientation affects performance only through innovation orientation, and not directly (eg. Han et al., 1998). Study by Langerak et al. (2004) mirrored these findings with no direct relationship between market orientation and performance, but only an effect mediated by new product development proficiency and innovation orientation.

In our model, we expect market orientation can influence overall export performance in ways other than influencing product innovation and new product development. Firms with strong market orientation are expected to be more adept than average in most or all of the marketing mix activities (e.g., channel management, sales force training, customer service, consumer and sales promotion programs, advertising) (Day, 1994; Baker and Sinkula, 2005) or more likely to be a learning organizations. For these reasons, the effect of market orientation on firm's business performance is not expected to be fully mediated by innovation. Accordingly, we suggest the following hypothesis:

*Hypothesis4: The extent of market orientation is positively related to overall export performance directly.*

Researchers in strategy and marketing suggested that the more innovative firms are those that are more timely, creative, prolific in the introduction of new products or services, and quicker in modifying existing offerings so as to provide superior benefits to their customers (eg. Deshpande et al., 1993). Cooper et al. (2004) suggested that a culture that fosters creative processes is central to NPD performance. Frishammar and Akehorte (2007) further found that among the three sub-dimensions of entrepreneurial orientation, only innovation orientation is positively related to performance in new product development, while proactiveness and risk taking show no such relationship. Therefore, we have:

*Hypothesis5: The extent of innovation orientation is positively related to product innovation performance.*

Abundant resources committed into product innovation activities should be one of the critical determinants of new product program success. To be more specific, among the internal factors



shown to be the most important determinants of innovative activity are qualified scientists and engineers (Hoffman et al., 1998). Oerlemans et al. (1998) reported that existence of technology policy instruments in the firm and planning for the future are internal factors linked to innovation efforts. Another internal variable is investments in R&D (Oerlemans et al., 1998). Among other internal factors that were found to be important determinants of success of innovative efforts are the nature of the commercialization and marketing effort, the degree of marketing involvement in product planning and firm competence in the area of technology strategy and technology management (Hoffman et al., 1998). Cooper (1996) further argued that adequate resource commitment is critical factor for success of new product development. Burgelman et al. (2004) also included resource availability and allocation as one of the five audit dimensions of new product success.

According to meta-analysis of the evidence on the determinants of product innovation, company resources are found to have significantly positive relationship with new product performance. The average correlation between company resources and NPP is 0.275 (Pattikawa et al., 2002), the correlation between dedicated human resources and NPP is 0.52 (Henard and Szymanski, 2001), and the correlation between dedicated R&D resources and NPP is 0.45 (Henard and Szymanski, 2001). Therefore, we suggest:

*Hypothesis6: The extent of innovation resources is positively related to product innovation performance.*

## **Product innovation performance and overall export performance**

The importance of new product success as a driver of performance and competitive advantage is well covered in the literature. Through innovation organizations diversify and adapt, and even rejuvenate or “reinvent” to fit the changing conditions of the technology and the market. Hult et al. (2004) pointed out that firms who display a greater ability to innovate will respond more successfully to environmental changes and will develop skills enabling them to gain some kind of competitive advantage and, hence, better performance. In the same vein, Zheng et al. (2005) evidenced that both technical as well as market innovations positively impact performance, the former having a deeper repercussion than the latter. In the international literature, innovation and new product development were also found to be valuable to overall export performance in Japan, India, Canada, Italy and China (Guan and Ma, 2003). Therefore, we propose that:

*Hypothesis7: Product innovation performance is positively related to firm's export performance.*

### **Environmental moderators**

Scholars suggested that managerial choice may be severely influenced by the moderating effect of the external business environment (Kaur and Gupta, 2010). We also consider the fit between market orientation and environmental moderators. Specifically, technological turbulence, market turbulence and competitive hostility have been frequently considered in market orientation studies and, therefore, we explore their moderating effects in the market orientation and performance link. Market turbulence, technological turbulence, and competitive intensity are likely to enhance market uncertainties, for they reflect rapidly changing buyer preferences, wide-ranging needs and wants, ongoing buyer entry and exit from the marketplace, price pressure from ambitious competitors'

actions, quick technology shifts and constant emphasis on offering new products. Under these circumstances, spending resources for market-oriented activities would be worthwhile. To be more specific, market-oriented firms assume that customer focus (i.e., to meet or exceed the customer requirements) is the cornerstone to achieve competitive advantage, for which an ongoing evaluation of customer needs is undertaken. As in dynamic environmental settings where technology, product preferences and competitor's conducts are constantly changing, market-oriented firms should be aware of this information and react consequently engaging in wider innovative activities to meet customers' exigencies. This would allow a superior corporate response to the market needs through product innovation. To sum up, as theoretically speaking, businesses operating in the more turbulent markets are likely to have a greater need to be market-oriented compared to businesses in stable markets (Slater and Narver, 1994). Therefore, we suggest:

*Hypothesis8: Technological turbulence positively moderates market orientation-export performance link.*

*Hypothesis9: Market turbulence positively moderates market orientation-export performance link.*

*Hypothesis10: Competitive intensity positively moderates market orientation-export performance link.*

## **RESEARCH METHOD**

### **Sampling and data collection**

To test research hypotheses, we examined exporters in manufacturing sectors located in three

major cities (Beijing, Wuhan and Shanghai) in mainland China. To collect the data, a questionnaire was developed and administered on-site to respondents by trained interviewers. A sample of 2000 companies located in these three cities was randomly selected from an online company catalog on official website of Ministry of Commerce ([www.mofcom.gov.cn](http://www.mofcom.gov.cn)) . The sampled exporters should meet the following two qualifications. First, it should be a manufacturing firm. Second, it has been exporting for over three years, because we will inquire about companies' new product performance and overall export performance in past three years in the questionnaire. These firms span diverse manufacturing industries, which increases the generalizability of our findings. For each firm, a senior manager was chosen as the key informant because our field interviews revealed that these managers were highly familiar with new product development and marketing strategy of his/her firm. Senior managers first were contacted by telephone to solicit their cooperation. The respondents were informed of the confidentiality of their responses and the academic purpose of the project. Respondents also were promised a summary report of the survey. Oral agreements to participate were obtained from 416 firms, and successful interviews were conducted onsite with managers from 283 firms. After eliminating surveys with excessive missing data or contradictory answers, we were left with 220 complete responses. A comparison between the respondent and non-respondent firms indicated there were no significant differences in terms of key firm characteristics (e.g. firm ownership, firm size, export experience, industry types, location), so non-response bias is not a likely threat for our hypotheses analyses. The sampled firms operate in a variety of sectors, including machinery and equipment, food, building and construction materials, automotive, furniture, chemicals, electronics and electrical appliances and metal products. The

sample distributions are depicted in Table 1.

**Table 1 Profile of Sampled Firms**

| characteristics       |                   | Percentage | characteristics   |                      | Percentage |
|-----------------------|-------------------|------------|-------------------|----------------------|------------|
| Employee              | ≥2000             | 14.5%      | export experience | 3-7 years            | 36.4%      |
|                       | 400 -1999         | 40.9%      |                   | 8-14 years           | 38.6%      |
|                       | <400              | 44.5%      |                   | ≥15 years            | 25.0%      |
| Annual export revenue | <10 million USD   | 20.9%      | product           | consumer products    | 47.7%      |
|                       | 10-50 million USD | 36.4%      |                   | industrial products  | 52.3%      |
|                       | >50 million USD   | 42.7%      | ownership         | SOEs                 | 13.6%      |
| Export intensity      | ≤20%              | 42.3%      |                   | private firms        | 30.9%      |
|                       | 20%-50%           | 32.3%      |                   | foreign-funded firms | 45.0%      |
|                       | ≥50%              | 25.4%      |                   | others               | 10.5%      |

## Measures

The survey instrument includes existing measures, and in the case of specific construct where valid measures is not available, new one is developed following standard measurement development procedures (Churchill, 1979). Table 3 shows all measurement items.

### *Market orientation*

To measure market orientation, we employ the MKTOR measure (Narver and Slater, 1990) that consists of 15 items and assesses three subfactors of competitor orientation, customer orientation, and interfunctional coordination. After purification process, one item is deleted from the original scale.

### *Innovation orientation*

Innovation orientation is quantified using five items adapted from Hurley and Hult (1998). After purification, one item is deleted from the original scale.

### *Innovation Resources*

The measurement of innovation resources commitments in product innovation is not available in extant literature, so we strictly follow the measurement scale development procedure recommended by Churchill (1979) to develop a new measure of innovation resources. Firstly, we try to generate measurement items capturing the different aspects of innovation resources based on previous literature on innovation management. Rothwell (1992) provided a good summary of key factors that emerged in many innovation management studies, including: good internal and external communication, treating innovation as a corporate wide task, implementing careful planning and project control procedures. Cooper (1996) further established that a clear and well-communicated new product strategy is critical success factor of new product performance. When examining the determinants of export performance, Guan and Ma (2003) classified the innovation capabilities into seven dimensions including learning, research and development (R&D), manufacturing, marketing, organizational, resource allocating and strategy planning capabilities. Based on their arguments, finally we choose seven elements after in-depth interview with export managers. Those seven elements include: (1) clear innovation strategy; (2) enough financial resources; (3) enough human resources; (4) cooperation with scientific research institutions; (5) cooperation among departments; (6) communication with suppliers and (7) communication with customers during the process of product innovation. As shown in next section, the newly-developed scale has acceptable reliability and construct validities.

### ***Product innovation performance***

The four-item scale developed by Baker and Sinkula (1999) is used to assess product innovation performance from quantity, timeliness, creativity and overall success rate of new product

introduction into the market.

### ***Export performance***

According to RBV studies, performance can be classified into financial (accounting-based measurement such as cash in hand/at bank, profitability, sales growth, etc.) and non-financial (market share, new product introduction, product quality, marketing effectiveness or manufacturing value-added). Profitability, sales growth and market share are the most common measurement of performance. As the present study utilized a multi-company and multi-sample design, performance differences in the nature of firms were controlled by using relative performance measures. Therefore, in this study, respondents were instructed to provide the extent of relative performance, including the firm's export sales revenue, export profitability and market share as well as their changes over the past three years, as compared with their principal competitors.

### ***Environmental Turbulence***

The three dimensions of environmental turbulence (technological turbulence, market turbulence and competitive hostility) are measured using scales derived from Jaworski and Kohli (1993).

### ***Control variables***

We include four control variables, which were shown by researchers to have significant influence on firm performance, in our moderated regression model. Export experience is assessed by asking the number of years since the firm began its export business. Firm size is indicated by natural logarithm of the number of full-time employees. Product type and company ownership are dummy variables. Product type includes consumer products (0) and industrial products (1) and company ownership includes SOEs (0) and others (1).

## RESULTS

### Reliabilities and validities

We assess the construct reliabilities and validities of all measurement scales through confirmatory factor analysis. Table 2 summarizes the means, standard deviations, correlations, reliability estimates such as Cronbach's  $\alpha$ , composite reliabilities (CR), average variances extracted (AVE), as well as discriminant validity estimates of all scales.

First of all, the constructs' Cronbach's alpha coefficients (ranging from 0.729 to 0.929) and the composite reliabilities (CRs) (ranging from 0.776 to 0.938) presented in Table 2 indicate that each exceeds the accepted reliability threshold of 0.70. In addition, all the average variances extracted (AVE) are greater than 0.50 cutoff (ranging from 0.503 to 0.816). Thus, all the measures demonstrate adequate reliability.

Second, existing measures in extant literature are used or adapted to suit the purposes of this study and go through a careful discussion and pilot study among researchers and EMBA students, so their content validity can be guaranteed.

Third, Table 3 reports the results of confirmatory factor analysis including loadings and fit indices. CFA analysis yields a model that fits the data well with NNFI, CFI, IFI and RFI all exceeding 0.90,  $X^2/df$  below 2.0 and RMSEA below 0.08 ( $X^2/df=1.61$ ; RMSEA=0.053; NNFI=0.97; CFI=0.97; IFI=0.97; RFI=0.92). All first-order standardized loading coefficients ranging from 0.56 to 0.91 and second-order standardized loading coefficients ranging from 0.88 to 0.93 are significant at the one-percent significance level. Therefore, convergent validities of all



measurement scales are acceptable.

Finally, discriminant validity was assessed by comparing the square root of AVE associated with each construct to the correlations among constructs. As shown in Table 2, diagonal elements represent the square root of the AVE, whereas the off-diagonal elements represent the correlations among constructs. In order to claim discriminant validity, diagonal elements should be larger than any other corresponding row or column entry. According to the results, each construct sufficiently differs from other constructs and, therefore, the discriminant validities of three constructs are established.

**Table 2 Means, standard deviations, correlations, reliability estimates and discriminant validity estimates**

|                                  | (1)                      | (2)                | (3)         | (4)                | (5)                | (6)                | (7)                | (8)                | (9)                | (10)               | (11)        |
|----------------------------------|--------------------------|--------------------|-------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------|
| (1) Customer Orientation         | <b>0.829<sup>a</sup></b> |                    |             |                    |                    |                    |                    |                    |                    |                    |             |
| (2) Competitor Orientation       | 0.572 <sup>*</sup>       | <b>0.734</b>       |             |                    |                    |                    |                    |                    |                    |                    |             |
| (3) Interfunctional Coordination | 0.648 <sup>*</sup>       | 0.544 <sup>*</sup> | <b>0.78</b> |                    |                    |                    |                    |                    |                    |                    |             |
| (4) Market Orientation           |                          |                    |             | <b>0.904</b>       |                    |                    |                    |                    |                    |                    |             |
| (5) Innovation Orientation       |                          |                    |             | 0.533 <sup>*</sup> | <b>0.734</b>       |                    |                    |                    |                    |                    |             |
| (6) Innovation Resources         |                          |                    |             | 0.712 <sup>*</sup> | 0.598 <sup>*</sup> | <b>0.794</b>       |                    |                    |                    |                    |             |
| (7) Product Innovation           |                          |                    |             | 0.487 <sup>*</sup> | 0.421 <sup>*</sup> | 0.540 <sup>*</sup> | <b>0.773</b>       |                    |                    |                    |             |
| (8) Business Performance         |                          |                    |             | 0.549 <sup>*</sup> | 0.301 <sup>*</sup> | 0.498 <sup>*</sup> | 0.464 <sup>*</sup> | <b>0.846</b>       |                    |                    |             |
| (9) Technological Turbulence     |                          |                    |             | 0.276 <sup>*</sup> | 0.316              | 0.406 <sup>*</sup> | 0.442              | 0.115              | <b>0.822</b>       |                    |             |
| (10) Market Turbulence           |                          |                    |             | 0.238 <sup>*</sup> | 0.212              | 0.314 <sup>*</sup> | 0.382 <sup>*</sup> | 0.178 <sup>*</sup> | 0.519 <sup>*</sup> | <b>0.740</b>       |             |
| (11) Competitive Intensity       |                          |                    |             | 0.306 <sup>*</sup> | 0.190 <sup>*</sup> | 0.180 <sup>*</sup> | 0.317 <sup>*</sup> | 0.134 <sup>*</sup> | 0.352 <sup>*</sup> | 0.500 <sup>*</sup> | <b>0.70</b> |
| Mean                             | 3.810                    | 3.693              | 3.49        | 3.665              | 3.662              | 3.493              | 3.361              | 3.564              | 3.429              | 3.374              | 3.42        |
| S.D.                             | 0.790                    | 0.771              | 0.78        | 0.667              | 0.771              | 0.803              | 0.777              | 0.844              | 1.019              | 0.917              | 0.95        |
| Cronbach's $\alpha$              | 0.888                    | 0.729              | 0.86        | 0.811              | 0.796              | 0.901              | 0.832              | 0.929              | 0.850              | 0.807              | 0.77        |
| CR                               | 0.929                    | 0.776              | 0.89        | 0.930              | 0.822              | .923               | 0.855              | 0.938              | 0.861              | 0.830              | 0.79        |

|     |              |       |      |       |       |       |       |       |       |       |      |
|-----|--------------|-------|------|-------|-------|-------|-------|-------|-------|-------|------|
| AVE | <b>0.687</b> | 0.539 | 0.62 | 0.816 | 0.539 | 0.630 | 0.598 | 0.717 | 0.676 | 0.547 | 0.50 |
|-----|--------------|-------|------|-------|-------|-------|-------|-------|-------|-------|------|

a: Diagonal elements (in bold) represent the square root of the AVE

b: Off-diagonal elements (included in the lower triangle of the matrix) represent the standardized correlations among constructs

\*\* : correlations are significant at the 0.01 level (2-tailed); \* : correlation is significant at the 0.05 level (2-tailed).

**Table 3 Measures and confirmatory factor analysis results**

| Second-order latent variables | First-order latent variables   | Observed variables   | second-order SLC (t-value) | first-order SLC (t-value) |
|-------------------------------|--|--|----------------------------|---------------------------|
| Market orientation            | Customer orientation   | 1. Our business objectives are driven primarily by customer satisfaction of importers.                             | 0.93 (-)                   | 0.88 (-)                  |
|                               |  | 2. We constantly monitor our level of commitment and orientation to serving overseas customers' needs.             |                            | 0.83 (17.27)              |
|                               |  | 3. Our strategy for competitive advantage is based on our understanding of importers' needs.                       |                            | 0.82 (17.14)              |
|                               |  | 4. Our business strategies are driven by our beliefs about how we can create greater value for overseas customers. |                            | 0.84 (17.77)              |
|                               |  | 5. We measure customer satisfaction systematically and frequently.   |                            | 0.80 (16.10)              |
|                               |  | 6. We give close attention to after-sales service.   |                            | 0.80 (16.03)              |
|                               | Competitor orientation   | 1. Our salespeople regularly share information within our business concerning competitors' strategies.*            | 0.88 (7.85)                | 0.30 (-)                  |
|                               |  | 2. We rapidly respond to competitive actions that threaten us.   |                            | 0.69 (7.18)               |
|                               |  | 3. Top management regularly discusses competitors' strengths and strategies.                                       |                            | 0.75 (7.52)               |
| Interfunctional coordination  | 4. We target overseas customers where we have an opportunity for competitive advantage.  | 0.90 (14.81)   | 0.76 (7.56)                |                           |
|                               | 1. Our top managers from every function regularly visit our current and prospective customers.                                 |  | 0.85 (-)                   |                           |
|                               | 2. We freely communicate information about our successful and unsuccessful customer experiences across all business functions. |  | 0.79 (14.08)               |                           |
|                               | 3. All of our business functions are integrated in serving the needs of our target markets.                                    |  | 0.81 (14.77)               |                           |
|                               | 4. All of our managers understand how everyone in our business can contribute to creating customer value for importers.        |  | 0.71 (11.98)               |                           |
| Technological                 |  | 5. All functional groups work hard to thoroughly and jointly solve problems.                                       |                            | 0.78 (13.77)              |
|                               |  | 1. The technology in our industry is changing rapidly.   |                            | 0.73 (-)                  |

|  |   |              |
|--|---|--------------|
| Turbulence                             | 2. Technological changes provide big opportunities in our industry.   | 0.86 (11.96) |
|  | 3. A large number of new product ideas have been made possible through technological breakthroughs in our industry.   | 0.87 (12.12) |
| Market Turbulence                      | 1. In our kind of business, customers' product preferences change quite a bit over time.                              | 0.86 (-)     |
|  | 2. Our overseas customers tend to look for new product all the time.  | 0.86 (14.13) |
|  | 3. We are witnessing demand for our products and services from customers who never bought them before.                | 0.63 (9.74)  |
|  | 4. New overseas customers tend to have product-related needs that are different from those of our existing customers. | 0.56 (8.39)  |
| Competitive Hostility                  | 1. Competition in our industry is cutthroat.  | 0.68 (-)     |
|  | 2. There are many "promotion wars" in our industry.   | 0.73 (8.63)  |
|  | 3. Anything that one competitor can offer, others can match readily.  | 0.78 (9.01)  |
|  | 4. Price competition is a hallmark of our industry.   | 0.64 (7.61)  |
| Innovation Orientation                 | 1. Technical innovation, based on research results, is readily accepted.  | 0.83 (-)     |
|  | 2. Management actively seeks innovative ideas.  | 0.82 (12.99) |
|  | 3. Innovation is perceived as too risky and is resisted (R). *  | 0.22 (3.14)  |
|  | 4. People are not penalized for new ideas that do not work.   | 0.61 (9.22)  |
|  | 5. Program/Project managers promote and support innovative ideas, experimentation and creative processes.             | 0.65 (9.96)  |
| Innovation Resources (newly developed) | 1. Our company has clear product innovation policies.   | 0.73 (-)     |
|  | 2. Our company has invested enough money in R&D activities.   | 0.81 (12.00) |
|  | 3. Our company has enough human resources in R&D activities.  | 0.84 (12.41) |
|  | 4. Our company has close coordination relationship with scientific research institutions and universities.            | 0.84 (12.41) |
|  | 5. Our company has well-established coordination mechanism among departments in the process of product innovation.    | 0.77 (11.25) |
|  | 6. Our company has well-established communication channels with suppliers in the process of product innovation.       | 0.80 (11.83) |
|  | 7. Our company has well-established communication channels with clients in the process of product innovation.         | 0.76 (11.15) |

|                                |   |              |
|--------------------------------|---|--------------|
| Product innovation performance | For your business unit's principal served market segment over the past three years.         |              |
|                                | 1. First to market with new application.  | 0.82 (-)     |
|                                | 2. New product introduction rate relative to average industry level.                        | 0.78 (12.38) |
|                                | 3. New product success rate relative to average industry level.                             | 0.75 (11.75) |
|                                | 4. Degree of product differentiation.   | 0.74 (11.52) |
| Export performance             | For your business unit's principal served overseas market segment over the past three year: |              |
|                                | 1. Export sales revenue relative to company objective.                                      | 0.85 (-)     |
|                                | 2. Change in export sales revenue relative to principal competitor.                         | 0.86 (16.73) |
|                                | 3. Profit relative to principal competitor.   | 0.91 (18.31) |
|                                | 4. Change in profit relative to principal competitor.                                       | 0.89 (17.85) |
|                                | 5. Market share relative to principal competitor.   | 0.79 (14.35) |
|                                | 6. Change in market share relative to principal competitor.                                 | 0.77 (13.94) |

$X^2=1690.49$ ;  $df=1050$ ;  $X^2/df=1.61$ ;  $RMSEA=0.053$ ;  $GFI=0.85$ ;  $NNFI=0.97$ ;  $CFI=0.97$ ;  $IFI=0.97$ ;  $RFI=0.92$

SLC: standardized loading coefficient

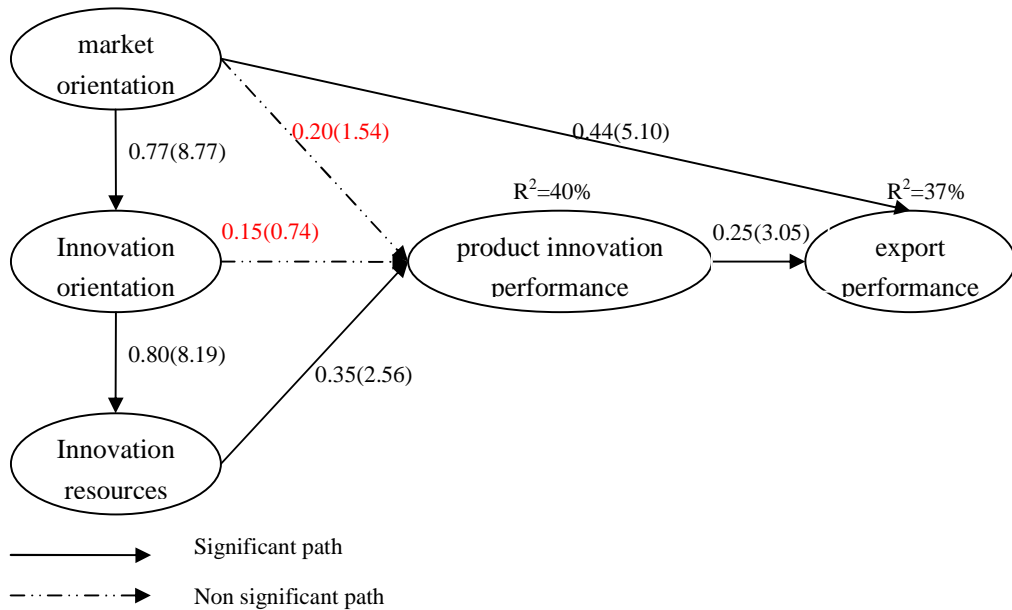
R denotes reverse-coded item.

\*: This item was eliminated after confirmatory factor analysis.

## Structural equation modeling and main effect tests

The structural equation model (SEM) is employed to test the interrelationships among all the research constructs. Before evaluating the structural models, the overall model fit must be assessed to ensure that the model adequately represents the entire set of causal relationships. The fit indices confirm that the model developed in this study is appropriate with acceptable goodness of fit with NNFI, CFI, IFI and RFI all exceeding 0.90 and RMSEA below 0.1 ( $X^2/df=2.69$ ;  $RMSEA=0.088$ ;  $NNFI=0.95$ ;  $CFI=0.95$ ;  $IFI=0.96$ ;  $RFI=0.92$ ). The model explains 40% of the variance in new product performance and 37% of the variance in overall export performance, the two key dependent variables in the study.

**Figure 2 Structural Model and Parameter Estimates**



$X^2=659.76$ ;  $df=245$ ;  $X^2/df=2.69$ ;  $RMSEA=0.088$ ;  $GFI=0.82$ ;  $NNFI=0.95$ ;  $CFI=0.95$ ;  $IFI=0.96$ ;  $RFI=0.92$ ;  $RMR=0.070$

As shown in Figure 2, the results indicate that there exist significantly positive relationships among firm’s resources. To be more specific, market orientation has a positive association with innovation orientation ( $\beta=0.77$ ,  $t=8.77$ ), supporting  $H_1$ ; Innovation orientation has a positive association with product innovation resources ( $\beta= 0.88$ ,  $t=8.19$ ), supporting  $H_2$ .

Among the three company resources, market orientation ( $\beta=0.20$ ,  $t=1.54$ ) and innovation orientation ( $\beta=0.15$ ,  $t=0.74$ ) do not improve product innovation performance directly, so  $H_3$  and  $H_5$  are rejected. Only product innovation resources have a direct impact upon product innovation performance ( $\beta=0.35$ ,  $t=2.56$ ), supporting  $H_6$ . In addition, market orientation ( $\beta=0.44$ ,  $t=5.10$ ) has a positive direct impact upon overall export performance, supporting  $H_4$ .

As for  $H_7$ , the result of structural model indicates that product innovation performance has positive relationship with overall export performance ( $\beta=0.25$ ,  $t=3.05$ ), therefore,  $H_7$  is supported.

## Moderated regression analysis and moderating effect test

**Table 4 Standardized Regression Coefficients (T-values) of Moderated Regression Analysis Results**

|   | Model 1     | Model 2        | Model 3                   | Model 4                   |
|---|-------------|----------------|---------------------------|---------------------------|
| <b>Control variables</b>                    |             |                |                           |                           |
| Firm size                                   | .056(.811)  | .042(.721)     | .054(.924)                | .050(.847)                |
| Export experience                           | .053(.756)  | .003(.042)     | .015(.244)                | .016 (.253)               |
| Product type                                | .018(.265)  | -.018(-.304)   | -.007(-.122)              | -.005(-.075)              |
| Company ownership                           | .114(1.613) | -.023(-.382)   | -.018(-.294)              | -.016(-.253)              |
| <b>Independent variable</b>                 |             |                |                           |                           |
| Market orientation                          |             | .552***(9.377) | .567***(9.050)            | .583***(9.229)            |
| <b>Moderating variable</b>                  |             |                |                           |                           |
| Technological turbulence                    |             |                | -.085(-1.235)             | -.083(-1.267)             |
| Market turbulence                           |             |                | .125 <sup>+</sup> (1.675) | .130 <sup>+</sup> (1.737) |
| Competitive intensity                       |             |                | -1.139(-.079)             | -.083(-1.200)             |
| <b>Interactions</b>                         |             |                |                           |                           |
| Market orientation×Technological turbulence |             |                |                           | .134*(1.976)              |
| Market orientation×Market turbulence        |             |                |                           | -.112(-1.378)             |
| Market orientation×Competitive intensity    |             |                |                           | .017(.225)                |
| <b>VIF</b>                                  | ≤1.093      | ≤1.159         | ≤1.729                    | ≤2.006                    |

+: p<0.1; \*: p<0.05; \*\*: p<0.01, \*\*\*: p<0.001

Notes: Dependent variable is Export Performance.

As shown in Table 4, the moderating effects are tested with a four-step hierarchical moderated regression analysis. At the first stage of the hierarchical regression, only four control variables Company Size, Export Experience, Product Type and Ownership are included (Model 1). These factors individually and collectively explain no variation in Export Performance with these data; they are included simply to allow for possible influence and more complete model specification. The second regression adds independent variable (Market Orientation) (Model 2). Market

Orientation has significantly positive total effect upon export performance. The third regression adds three environmental moderating variables (Model 3). And finally, the fourth regression adds two-way interaction terms of market orientation and three environmental moderators. The results show that the addition of the interaction terms to the main effects model increase  $R^2$  by 2.9% ( $\Delta F=8.385$ ,  $\text{Sig.}=0.004$ ). The standardized coefficient of the interaction term of market orientation and technological turbulence is significantly positive ( $\beta=0.134$ ,  $t=1.976$ ), supporting  $H_8$ . However, the standardized coefficients of the interaction term of market orientation and market turbulence ( $\beta=0.112$ ,  $t=-1.378$ ) and the interaction term of market orientation and competitive intensity ( $\beta=0.017$ ,  $t=0.225$ ) are not significant, thus  $H_9$  and  $H_{10}$  are declined.

## **CONCLUSION AND POLICY IMPLICATIONS**

According to Drucker (1954), an organization has only two value-creating functions: marketing and innovation. Our study addresses a gap in the literature by exploring how market orientation impacts export performance through stimulating accumulation of innovation-related resources and improving product innovation performance. We identify three variables associated with product innovation, which are innovation orientation, resources commitment and product innovation performance. Then the research examines the impact of market orientation on export performance via these three product innovation variables and the moderating effect of environmental turbulence in the market orientation and export performance link in the context of Chinese manufacturing firms.

Our results basically provide support for theoretical explanations of the impact of market

orientation upon export performance directly and indirectly through product innovation based on RBV theory. This study highlights the importance of a market-oriented culture to develop and foster innovation orientation and innovation resources commitment in Chinese manufacturing exporters. These resources might very well be keys for the survival and success of the firm competing in overseas markets. What's more, technological turbulence appears to have a positive moderating effect on the relationship between market orientation and overall export performance.

This study makes four important theoretical contributions. Firstly, by viewing market orientation, innovation orientation and innovation resources as critical company resources, we examine the Resource-Based Theory in the field of marketing and innovation strategies. Secondly, we depart from the majority of past research investigating the market orientation-innovation-performance chain by distinguishing among three constructs involved in product innovation activity. Our research findings indicate that firms' innovation orientation is a basic cultural feature to recognize the importance of innovation in the organizational strategy and it acts as forerunner of the innovation efforts undertaken by firms in terms of the resources commitment and finally leads to superior product innovation performance. Thirdly, by using the samples of Chinese manufacturing exporters, we find that market orientation can improve product innovation and finally facilitate export performance. Our results are consistent with the most research findings reported in Western settings, and may add another evidence to clarify inconsistent findings about market orientation and product innovation link. In the context of transitional economies, the strengthening of market orientation also serves as an important accelerator of innovation resources, since it is still a scarce resource in comparison with more developed economies. Finally, we extend the studies about



market orientation-innovation-performance relationship from domestic market to export market, so as to add new knowledge for market orientation and innovation research and especially for those which are related to the RBV of strategic management, which is especially of great value to manufacturing exporters who are eager to gain superior export performance through innovative products. These results are important because they empirically test theories, which are originally developed mainly in the first world and in the domestic markets, in the context of a transitional and developing country and in export markets.

Some insightful managerial implications can be derived from our research findings.

Firstly, our research findings contribute an evidence for the positive effect of market orientation on business performance. In addition, our data show that market orientation can impact business performance both directly and indirectly. Becoming market oriented does matter, and can have important effects on both new product performance and overall export performance. Then, exporters need to strengthen their efforts to continue transforming firms and more fully embrace a market-oriented culture. In that sense, a practical starting point for becoming market-oriented may be measuring and monitoring market-oriented values and beliefs among employees, and the use of these scores in setting managers' objectives and compensation schemas. For companies that have foreign market presence and/or exporting as the major sources of revenues, these findings impose higher challenges. These companies may need to develop a market oriented culture not just constrained to their own national marketplaces but to the different foreign markets where they operate. Otherwise, even if the firm is very successful in national markets, it will still experience failures when expanding to other countries.

Secondly, the findings of our empirical study have generally confirmed partial mediating role of product innovation between market orientation and business performance, and this finding provides sound reasons for manufacturers' efforts to develop innovation orientation. The culture favorable to the adoption of innovations allows recognizing in a more active way the need to innovate, the new ideas that appear within the firm and the information that must be shared for their development. Although innovation orientation may not contribute directly to the introduction of new products, it helps in creating an internal environment that fosters the exploration of customers' and competitors' information in more novel ways. Consequently, it is the first necessary step to initiate the market-oriented innovative process.

Thirdly, in today's dynamic business environment, the internal organizational capability to innovate and its supportive mechanism deserve special attention. A stock of resources that can be useful for innovation are especially important. Our results show that neither market orientation nor innovation orientation can directly improve new product performance. Both of them can influence positively the product innovation success only when they stimulate exporters to accumulate appropriate innovation resources.

Finally, exporting companies' managers must correctly ascertain the nature of the relevant environment and formulate strategies accordingly. Our research shows that when the environment is very unstable and dynamic in terms of technological development, market orientation exerts a more positive total effect on the overall export performance. Therefore, manufacturing firms should make more efforts in developing market orientation culture because it encourages a wider and stronger innovation efforts to cope with the quick technological changes.

## **LIMITATIONS AND FUTURE RESEARCH DIRECTIONS**

This research acknowledges a series of limitations that it is necessary to bear in mind when interpreting its results.

First of all, there are other potential company resources which play mediating effect in the market orientation and export performance link. Probing into other mediating resources (such as reputational resources, knowledge-based resources) may also represent interesting avenues for future research.

Secondly, for the new products to succeed in the markets, firms should be responsive to both current and potential customers' needs. Therefore, managers try to develop the firm's current capabilities in order to respond efficiently to current customer needs and wants. On the other side, they endeavor to possess strong capability of satisfying potential customers' needs (Narver et al., 2000). Further investigations can study the importance of particular and/or specific types of market orientation (e.g., responsive and proactive) on firm performance and new product success in international settings.

Thirdly, future research should also try to extend the conceptual model to include other kinds of innovation such as process innovation, marketing innovation and administration innovation. Other potential mediating variables such as organizational learning can also be incorporated into the framework.

Another research direction is to probe into the difference of the proposed model between large companies and SMEs. Market orientation and innovation orientation studies mostly investigated

large firms. However, the research models which were developed for large-scale firms may have different meanings in a SME context. Therefore, comparison of proposed model in our research between large firms and SMEs is a very insightful and interesting theme in future research.

In addition to modification of conceptual framework, research methodology also needs to improve. Firstly, the study uses single sourcing and self and retrospective reporting, therefore it can be biased by artificially high intercorrelations produced by overall response tendency. Secondly, this study is based on a cross-sectional sample. Since cross-sectional design does not help to infer causality among the constructs and inhibits common method bias, a longitudinal study could verify, complement, and extend the findings in this study. Thirdly, the sample was collected from a variety of industries. However, a homogenous sample may provide deeper insights about our research theme. In this vein, future studies may investigate specific industries, such as textile, food or automobile exporters. Finally, the manufacturing industry in China is highly diversified with wide regional differences. For example, industry infrastructure and facilities located in coastal regions and large cities are generally more developed than those in the interior regions. Investigating firms from more cities and areas will definitely enhance the generalizability of our model and research findings in future study.

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