

Experiential and Informational Knowledge, Architectural Marketing Capabilities, and the Adaptive Performance of Export Ventures: A Cross-National Study

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ABSTRACT

Knowledge-based view (KBV) theory posits that the acquisition and use of relevant knowledge is key to understanding organizational performance. However, there is relatively little empirical evidence to support or refute several important propositions underlying KBV theory explanations of organizational performance. In particular, the extant literature has focused on individual technical and scientific components of the knowledge bases of firms in dynamic industries, and largely ignored both different levels of informational and experiential knowledge relevant to the market environment, and the increasingly important context of exporting. Our study addresses these knowledge gaps by developing a framework for export venture knowledge management and empirically examining relationships between different types of individual-level and organizational-level knowledge relevant to the market environment, architectural marketing capabilities, and the adaptive performance of export ventures. Using primary data collected in the United Kingdom and China, our study indicates that export ventures' organizational-level experiential and informational knowledge, and individual-level experiential knowledge relevant to the market environment, is positively associated with export ventures' architectural marketing capabilities, which are in turn associated with the adaptive performance of export ventures.

Subject Areas: Causal Models, Globalization, Knowledge-Based Systems, Organizational Theory, Planning/Strategy, Survey Research/Design.

INTRODUCTION

Two fundamental questions in the study of organizations are “Why do firms exist?” and “Why do some firms perform better than others?” (e.g., Conner, 1991; Helfat & Raubitschek, 2000). Over the past decade, a new school of thought addressing both of these questions labeled the “knowledge-based view of the firm” (KBV) has emerged (e.g., Conner & Prahalad, 1996; Gupta & Govindarajan, 2000). The KBV posits that firms exist as social communities of knowledge (e.g., Demsetz, 1991; Kogut & Zander, 1996), with knowledge forming the most strategically significant firm resource, and heterogeneity in knowledge resources explaining interfirm performance variations (e.g., Grant, 1996b; Kogut & Zander, 1992). The KBV has generated significant scholarly interest across a large number of disciplines including organization theory, decision sciences, strategic management, management information system (MIS), operations, marketing, and international business (e.g., Basu, 1998; Earl, 2001; Hult, 1998; Inkpen & Dinur, 1998; Sinkula, 1994; Spender, 1996). Managers have also shown considerable interest in KBV theory, resulting in the creation of knowledge management functions in many organizations and knowledge management services becoming a significant source of revenue for consulting firms.

However, despite this widespread scholarly and managerial interest, understanding of the KBV theory on which knowledge management practice is based is limited by three characteristics of the existing literature. First, while a fundamental KBV premise is that an organization’s knowledge base, comprising different types of knowledge at different levels of the organization, is linked with business performance outcomes, there have been remarkably few direct attempts to empirically examine this proposition. While the literature reveals a number of studies examining relationships between individual types of knowledge at particular levels within organizations, such as corporate-level research and development (R&D) activity and patents, with performance outcomes (e.g., Henderson & Clark, 1990), there have been few, if any, studies that simultaneously examine multiple components of an organization’s knowledge base. Since KBV theory explicitly views a firm’s knowledge base as comprising different types of knowledge at different levels in the organization, this is an important gap in existing knowledge. Failing to empirically examine such a fundamental KBV proposition can lead to questions concerning the utility of KBV theory, and the validity of resulting knowledge management prescriptions.

Second, both theoretical and empirical research in the KBV literature has focused primarily on technology-intensive and dynamic industries such as semiconductors, biotechnology, and pharmaceuticals. As a result, most studies have emphasized technical and R&D knowledge, largely ignoring knowledge relating to an organization’s market environment (e.g., Lord & Ranft, 2000; Sinkula, 1994). Although the notion of external market information as an important resource has been addressed in the marketing literature (e.g., Jaworski & Kohli, 1993; Slater & Narver, 1994), this has not been integrated within a KBV theory framework to include different types and levels of market knowledge in an organization’s knowledge base, and the use of this knowledge in the development and utilization of organizational capabilities that allow organizations to adapt to their environment.

Third, despite the emergence of the KBV school of thought during a period of unprecedented globalization of economic activity, there have been few theoretical or empirical studies that reflect this new global reality. While a small number of empirical studies have examined KBV knowledge transfer propositions in the multinational and international joint-venture context (e.g., Inkpen & Dinur, 1998; Subramaniam & Venkatraman, 2001), the export context has been largely ignored by KBV researchers. This is an important omission as exporting is an important and rapidly growing foreign market entry and international sales expansion mode for firms around the globe (e.g., Peng & York, 2001). In fact, the value of world export trade now exceeds \$5 trillion annually (World Bank, 2001), accounting for more than 10% of global economic activity (International Monetary Fund, 2001). Exporting therefore represents an important context for knowledge management in which we currently have little, if any, theoretical or empirical insight.

Our study addresses these important gaps in existing knowledge and makes two primary contributions. First, we fill a major gap in the literature by integrating insights from the KBV, marketing, and international business literature and qualitative fieldwork interviews to develop a framework for knowledge management in export ventures. This extends knowledge management theory into the large and increasingly important domain of exporting and offers important new insights for researchers and managers. Second, we provide new empirical insights connecting important elements of knowledge management with the performance of export ventures in the United Kingdom and China. Our findings enhance current knowledge by supporting two important but previously untested KBV premises linking (1) different types and levels of knowledge about the market environment in the organization's knowledge base with the organizational capabilities by which the organization adapts to its market environment, and (2) the organization's capabilities with which it adapts to its market environment with its adaptive performance.

The remainder of this paper is organized as follows. First, we describe the export venture context for our study. Second, we integrate insights from KBV theory and the marketing and exporting literature to develop a theoretical framework for understanding export venture knowledge management. Next, we describe the fieldwork interviews and literature-based insights used to identify particularly important elements and relationships within our export venture knowledge management framework and develop specific hypotheses of expected relationships between export venture knowledge, capabilities, and adaptive performance. We then describe the research design, measures, and data collection methods employed. Next, we present our measurement and hypothesis testing results and discuss their theoretical and managerial implications. Finally, we consider the limitations of our study and promising directions for future research.

STUDY CONTEXT

There is broad agreement in the KBV literature that knowledge is context-specific (e.g., Brown & Duguid, 1991; Nonaka, 1994). The context for our study is the important but previously neglected area of exporting. The exporting literature suggests that the primary unit of analysis in understanding firms' export performance is the export venture (Ambler, Styles, & Xiucum, 1999; Cavusgil & Zou,

1994). Export ventures are analogous to strategic business units (SBUs) in that they represent the individual export product market efforts of the firm, and comprise a single product or product line exported to a specific foreign market (Cavusgil & Zou, 1994). In building an export venture knowledge management theory framework, it is therefore necessary to synthesize perspectives from KBV theory with insights regarding the export venture context. The relevant exporting, international business, and international marketing literature indicate two key characteristics of the export venture context that are germane to developing an understanding of export venture knowledge management. First, export ventures are primarily marketing-based business units (e.g., Cavusgil & Zou, 1994; Katsikeas, Leonidou, & Morgan, 2000). Second, the key driver of an export venture's strategic goal accomplishment lies in the venture's ability to adapt its value offerings to meet the particular requirements of the foreign market targeted (e.g., Cavusgil & Zou, 1994). These characteristics of the export venture context for this study indicate that knowledge in export ventures related to the ability to effectively and efficiently perform marketing-related tasks that enable it to deliver value offerings that meet the requirements of the target export market is of particular importance in understanding how knowledge management may contribute to enhancing export venture performance.

A FRAMEWORK FOR EXPORT VENTURE KNOWLEDGE MANAGEMENT

While the domain of knowledge management is diverse and encompasses many different disciplines, the KBV is the fundamental theory base on which knowledge management is founded. The KBV represents a synthesis of economic theory concerning the productive value of intellectual capital (e.g., Nahapiet & Ghoshal, 1998), organization theory concerning the boundaries and internal organization of the firm (e.g., Kogut & Zander, 1992, 1996), and the resource-based view of the firm in strategic management (e.g., Conner & Prahalad, 1996). Integrating these different theoretical perspectives, KBV theory broadly posits that knowledge management concerns an organization's ability to develop and utilize a base of intellectual assets in ways that impact the achievement of strategic goals (e.g., Grant, 1996b; Spender, 1996). KBV theory indicates that there are two key elements in understanding knowledge management and its relationship with firm performance: (1) the knowledge base of the firm, comprising the understanding and know-how that allow the firm to take actions designed to accomplish strategic goals (e.g., Grant, 1996b; Kogut & Zander, 1992), and (2) the capabilities by which the firm's knowledge base is developed, maintained, accessed, and deployed in pursuit of desired strategic objectives (e.g., Davenport & Prusak, 1998; Nonaka, 1994).

The Knowledge Base of Export Ventures

The KBV literature reveals many different approaches to conceptualizing and defining knowledge (e.g., Davenport & Prusak, 1998; Von Krogh, Nonaka, & Aben, 2001). However, the exporting literature suggests that two types of knowledge may be viewed as particularly important elements of the knowledge base of

export ventures. First, market information concerning the export venture's customers, competitors, and channels, and the broader environment in the target export market has been identified as an important export venture knowledge resource (e.g., Katsikeas & Morgan, 1994; Souchon & Diamantopoulos, 1996). Market information may be a particularly important knowledge resource because it provides insights into which value-adding activities the organization should undertake, and how these should be accomplished in ways that match market conditions (e.g., Day, 1994; Slater & Narver, 1995). Such export market information knowledge is consistent with KBV theory conceptualizations of "informational" (also referred to as "declarative" and "know-what") knowledge concerning data that have been organized to give meaning (e.g., Kogut & Zander, 1992, 1996; Nonaka, 1994). Second, experience related to performing exporting activities and the venture's foreign market context has also been identified as a particularly important export venture knowledge resource (e.g., Cavusgil & Zou, 1994; Reid, 1981). For example, the literature has identified the knowledge gained from experience of overseas market operations as an important resource for successful export marketing (e.g., Albaun, Strandskov, & Duerr, 1998; Ambler et al., 1999; Erramilli, 1991). This is consistent with KBV theory conceptualizations of "experiential" (also referred to as "procedural" and "know-how") knowledge concerning accumulated skills that allow required tasks to be effectively and efficiently accomplished (e.g., Helfat, 1997; Nass, 1994; Von Hippel, 1988).

Knowledge-based view theory indicates that these two types of knowledge differ in that experiential knowledge tends to be tacit and generally difficult to codify and communicate while informational knowledge is generally explicit and easier to codify and communicate (e.g., Kogut & Zander, 1992; Polanyi, 1966; Reed & DeFillippi, 1990). Despite these differences, KBV theory also indicates that these two types of knowledge are interrelated. Informational "know-what" understanding impacts choices concerning the selection and performance of needed tasks and thereby affects the experiential knowledge base of the export venture (e.g., Nonaka, 1994), while experiential knowledge shapes what information is attended to and how it is interpreted in decision making (e.g., Walsh, 1995). This indicates that experiential knowledge within an export venture is likely to influence the venture's informational knowledge base and vice versa.

In addition to identifying different types of knowledge, the KBV literature also indicates that knowledge exists at different levels within organizations (e.g., Brown & Duguid, 1991; Kogut & Zander, 1996). From this perspective, KBV theorists posit that both informational and experiential components of any organization's knowledge base are created, stored, and used at two different levels: the individual and the organizational (e.g., Matusik & Hill, 1998; Nonaka, 1994). This is consistent with the exporting literature, which recognizes that both informational and experiential knowledge relevant to the export market and the performance of export marketing activities exists at the level of individual personnel as well as at the export venture level (e.g., Ambler et al., 1999; Reid, 1981). Synthesizing these insights from the exporting literature and KBV theory therefore suggests that the knowledge base of export ventures consists of a combination of interrelated informational and experiential knowledge at the individual and organizational levels (e.g., Kogut & Zander, 1992).

Capabilities for Developing and Deploying the Export Venture's Knowledge Base

The literature indicates that learning is the primary mechanism by which informational and experiential knowledge are developed and maintained at both individual and organizational levels (e.g., Cook & Yanow, 1993; Huber, 1991; March, 1991). Learning at both levels is viewed in KBV theory as a process involving the acquisition of information, interpretation of the information to derive meaning, utilization of the resulting understanding in ways that permit behavior change, and storage of the resulting knowledge for future use (e.g., Fiol 1994; Hult, 1998). At the organizational level, KBV theory indicates that in addition to these stages, information must be disseminated or shared between individuals for learning to take place (e.g., Brown & Duguid, 1991; Hurley & Hult, 1998; Nonaka, 1994). Dissemination of information takes place from individuals to the organization as well as vice versa through a number of formal (e.g., sales reporting systems, company newsletters) and informal ("water-cooler" conversations, company social events) mechanisms (e.g., Daft & Huber, 1987; Matusik & Hill, 1998). These KBV theory knowledge development viewpoints are consistent with a number of theoretical and empirical studies of exporting that have examined environmental information acquisition and dissemination processes as mechanisms for learning about markets at the organizational level (e.g., Cadogan, Diamantopoulos, & de Mortanges, 1999; Souchon & Diamantopoulos, 1996), and studies of foreign market acculturation as a market learning process at the individual level (e.g., Francis, 1991). As such it is well accepted in the exporting literature that learning and information dissemination capabilities are valuable sources of competitive advantage that help determine an export venture's ability to adapt to its environment (e.g., Albaum et al., 1998).

In terms of deploying the export venture's knowledge base, KBV theory posits that in order to impact performance, the venture's knowledge base must be converted into organizational-level capabilities that enable the effective and efficient accomplishment of tasks that allow the venture to successfully adapt to its environment (e.g., Kogut & Zander, 1992; Nonaka, 1994). Theoretically, this conversion process involves the transfer and combination of individual and organizational-level informational and experiential knowledge through the development of the routines on which organizational capabilities are built (e.g., Nelson & Winter, 1982). Routines develop as individuals and groups draw on available experiential and informational knowledge and apply it to solving the organization's problems (e.g., Galunic & Rodan, 1998; Matusik & Hill, 1998). This results in the sharing and combining of knowledge and the socialization of heuristics in the form of problem-solving processes (e.g., Cohen, 1991; Kogut & Zander, 1992). Routines are combined within the organization to develop capabilities that are the organizational processes by which available resources are combined, transformed, and deployed in ways that create valuable outcomes (e.g., Makadok, 2001; Teece, Pisano, & Shuen, 1997). The development of organizational capabilities therefore represents a process of "embedding" the venture's knowledge base (e.g., Grant, 1996a; Winter, 1987). Consequently, organizational capabilities have been viewed as a form of "organizational memory" (e.g., Leonard-Barton, 1995). As the venture's knowledge base is updated over time, KBV theory indicates that newly

available knowledge is used to update and adapt its capabilities (e.g., Helfat, 1997; Nelson & Winter, 1982; Teece et al., 1997).

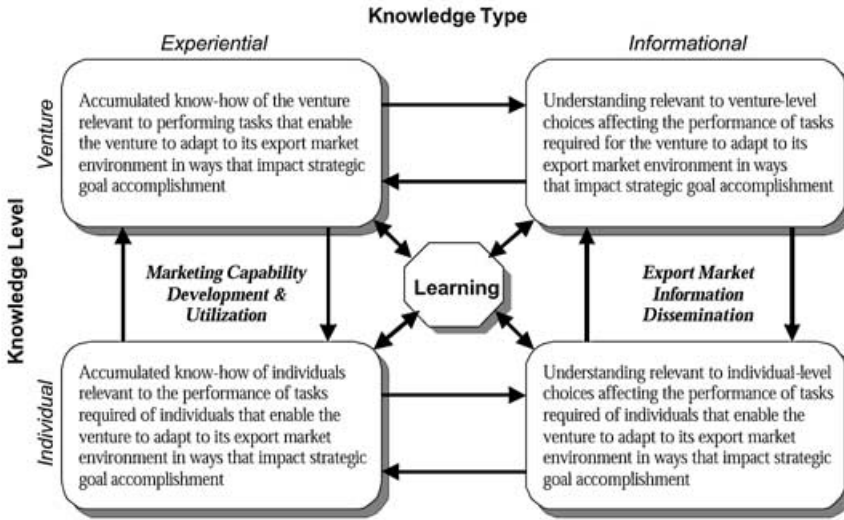
The Knowledge Base, Capabilities, and Performance of Export Ventures

Knowledge-based view theory views organizational performance as a function of an organization's ability to adapt to its environment (e.g., Cockburn, Henderson, & Stern, 2000; Grant, 1996a). This is consistent with the exporting literature, which indicates that the primary determinant of export venture performance is the venture's success in adapting to the particular requirements of its target export market (e.g., Albaum & Tse, 2001; Cavusgil & Zou, 1994). In understanding how export ventures adapt to their foreign market environments, the KBV literature posits that the ability to embed available informational and experiential knowledge in relevant organizational capabilities is a key theoretical premise (e.g., Kogut & Zander, 1992; Teece et al., 1997). Prior KBV research has identified the ability to leverage an existing knowledge base by transferring and combining knowledge to develop superior organizational capabilities as a driver of firms' success in adapting to their environments in terms of product and process innovation, managing competitive and regulatory risk, and utilizing available resources efficiently (e.g., Von Krogh et al., 2001).

The exporting literature indicates that in ventures' efforts to adapt to the export market environment in ways that achieve desired strategic goals, the most important organizational capabilities that can be created from an export venture's knowledge base concern architectural marketing capabilities (e.g., Cavusgil & Zou, 1994; Katsikeas, Piercy, & Ioannidis, 1996). Architectural marketing capabilities are defined in the literature as the processes by which firms plan appropriate combinations of available knowledge and other resources to deploy into their marketplace(s) and execute these planned resource deployments, transforming them into realized value offerings for target market(s) (e.g., Day, 1994; Madhavan & Grover, 1998; Vorhies & Morgan, 2003). Our export venture knowledge management framework, as depicted in Figure 1, therefore suggests that an export venture's knowledge base enables the development and utilization of architectural marketing capabilities that determine the extent to which the venture is able to adapt to the requirements of its target export market in ways that accomplish its strategic goals.

HYPOTHETICAL MODEL DEVELOPMENT

Our export venture knowledge management framework (Figure 1) draws on the KBV and exporting literature to provide a broad theory framework for identifying elements in the knowledge base and knowledge-related capabilities of export ventures that are relevant in understanding how knowledge management may enable superior export venture performance. Existing theoretical and empirical understanding of the various elements of our export venture knowledge management framework differs widely. For example, market information dissemination has been an area of considerable theoretical and empirical attention in the marketing literature (e.g., Maltz & Kohli, 1996). Similarly, learning has been extensively studied in both the psychology and management fields (e.g., Hult, Hurley, Giunipero,

Figure 1: Export venture knowledge management framework.

& Nichols, 2000). However, the knowledge-level, knowledge-type, and architectural marketing capability elements of our export venture knowledge management framework have received less research attention. It is on these aspects of export venture knowledge management that we therefore focus our attention in developing testable hypotheses.

To develop a hypothetical model concerning relationships involving these elements of our export venture knowledge management framework, and to help operationalize key constructs, we synthesized our previous literature-based insights with exploratory interviews with managers involved with export ventures. Our fieldwork involved 17 interviews with marketing managers, international business development managers, CEOs, and account development managers in different firms from a cross-section of industries. The 17 managers interviewed had responsibility for 29 export ventures. The interviews were conducted using an open-ended format and typically lasted between 1.5 and 2 hours.

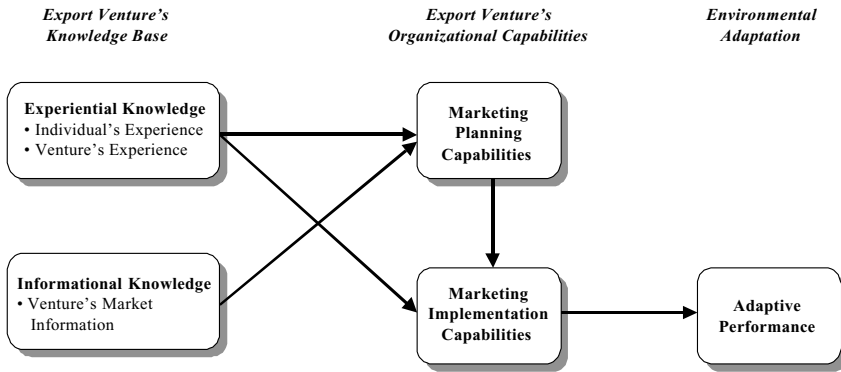
Supporting our export venture knowledge management framework, our interviews indicated that the knowledge base of export ventures comprises both experiential and informational knowledge. Our fieldwork indicated that experiential knowledge of both the exporting process and the specific market targeted by the venture is valuable because it enables managers to better understand the particular requirements of channel members and customers in the export market (e.g., Lord & Ranft, 2000; Peng & York, 2001). Managers also highlighted the importance of informational knowledge concerning customers, competitors, channels, and the broader environment in the export venture's target market as being a valuable component of the venture's knowledge base. Our fieldwork interviews indicated

that experience relevant to the export market and the accomplishment of exporting tasks is also viewed by managers as an important export venture knowledge resource at both the individual and organizational levels. Interestingly, however, because of the relatively small number of personnel in most export ventures, along with the central importance of knowledge concerning the target export market in venture decision making, managers indicated that transferring market information from the individual to the export venture level was usually quickly and easily achieved. Our fieldwork therefore suggested that informational knowledge at the individual level was not a particularly important element in explaining the relationship between an export venture's knowledge base and its performance.

From an organizational capability perspective, the fieldwork interviews supported the exporting literature in indicating that since export ventures are fundamentally marketing-based business units, marketing capabilities are important in determining the venture's ability to adapt to the requirements of its target export market. Our fieldwork revealed that the architectural capabilities of marketing planning and implementation are seen as being particularly important (cf. Henderson & Clark, 1990). Managers viewed the export venture's marketing planning capability as concerning the processes used to orchestrate the integration of the venture's specialized marketing capabilities (such as product development, advertising, channel management, etc.), and the combinations of resources (e.g., brand equity, channel relationships, etc.) they are designed to leverage, in ways that optimize venture goal achievement (e.g., Day, 1994; Moller & Anttila, 1987). Consistent with the marketing literature, our fieldwork revealed that managers viewed the export venture's marketing implementation capability as concerning the routines by which export ventures transform intended export marketing strategy into realized actions and resource deployments (e.g., Bonoma, 1985; Noble & Mokwa, 1999).

Consistent with both the KBV and exporting literature, the export venture managers we interviewed consistently described the ability of their venture to achieve its particular strategic objectives as being fundamentally determined by the degree to which the venture understood and responded to the specific and idiosyncratic requirements of their target export market (e.g., Cavusgil & Zou, 1994; Katsikeas et al., 2000). Managers viewed the experience of the individuals in the venture, as well as the experience of the venture itself and the export market information available to it, as critical knowledge resources in enabling the venture to develop and utilize the architectural marketing capabilities that drive export venture performance. This is consistent with the exporting (e.g., Katsikeas & Morgan, 1994; Souchon & Diamantopoulos, 1996) and marketing literatures (e.g., Day, 1994; Li & Calantone, 1998), in linking a firm's market-related knowledge with responsive marketing capabilities in determining adaptive performance.

To summarize, as depicted in Figure 2, our hypothetical model indicates that experiential knowledge at the individual and organizational levels, and market information knowledge at the organizational level, are particularly important elements of the knowledge base of export ventures. These knowledge base elements are important because they allow export ventures to establish and adapt marketing planning and marketing implementation capabilities that enable them to transform their available resources into superior adaptive performance outcomes in their target foreign markets.

Figure 2: Hypothetical model.

HYPOTHESES

Knowledge-based view theory posits that knowledge exists as an individual-level as well as an organization-level phenomenon (e.g., Brown & Duguid, 1991; Cohen, 1991). At the individual level, our fieldwork indicated that experiential knowledge, concerning the accumulated learning of individuals that allows them to perform relevant exporting tasks (e.g., Tyre & Von Hippel, 1997), is seen as a particularly important aspect of export ventures' knowledge base (e.g., Reid, 1981). The literature suggests that for such individual-level experiential knowledge to become a knowledge asset for the firm, it must be transferred to the organization through the development of organizational routines and capabilities (e.g., Cohen & Bacdayan, 1994; Zander & Kogut, 1995). In the context of export ventures and their architectural marketing capabilities, our fieldwork suggested that the experiential knowledge of export venture personnel was likely to be an important aspect of the venture's knowledge base for developing and using both marketing planning and marketing implementation capabilities. Knowledge-based view theory, exporting theory, and our fieldwork, therefore suggest that

- H1: The individual experiential knowledge of export venture personnel is positively related to the venture's (a) marketing planning and (b) marketing implementation capabilities.

At the export venture level, experiential knowledge concerns accumulated environmental learning relevant to doing business in the venture's focal market (e.g., Cavusgil & Zou, 1994). International business theory indicates that such experiential knowledge is key to explaining the firm's internationalization process (e.g., Eriksson, Johanson, Majkgard, & Sharma, 1997; Erramilli, 1991). Experiential knowledge is particularly important in firms' international development because

it enables firms to better match their internal resources with external opportunities in foreign market environments (e.g., Leonidou & Katsikeas, 1996; Lord & Ranft, 2000). Supporting KBV theory propositions concerning the embedding of knowledge in organizational capabilities (e.g., Hult, 1998), our fieldwork indicated that the creation and updating of the venture's marketing planning and marketing implementation capabilities is the primary mechanism by which export ventures' experiential knowledge relevant to their target market enables better adaptation to their market environment. We therefore hypothesize that

- H2: Export venture experiential knowledge is positively related to the venture's (a) marketing planning and (b) marketing implementation capabilities.

Knowledge-based view theory indicates that organizational-level informational knowledge consists of acquired facts and data that are explicit and can be relatively easily stored, accessed, and transferred (e.g., Kogut & Zander, 1992). Supporting the exporting literature (e.g., Cavusgil & Zou, 1994; Souchon & Diamantopoulos, 1996), our fieldwork identified market information concerning explicit knowledge regarding customers, competitors, channel members, and the broader business environment in the export venture market, as a key element of the knowledge base of export ventures. Resource-based theory suggests that for such informational knowledge to be valuable, it must allow the venture to enhance its effectiveness or efficiency (e.g., Barney, 1991). From a KBV perspective, extracting value from informational knowledge involves embedding this knowledge in the firm's capabilities (e.g., Nelson & Winter, 1982; Kogut & Zander, 1996). Our fieldwork suggested that both of these viewpoints are appropriate in the context of an export venture's market information knowledge. Such knowledge was considered important by managers as an information input to the venture's marketing planning capability that helps to improve the quality of decision making (e.g., Slater & Narver, 1995). Market information knowledge was also viewed as helpful in guiding how aspects of the venture's marketing planning capability should be designed and managed to align it with the requirements of the export venture's market environment (e.g., Day, 1994; Moonman & Slotegraaf, 1999). Interestingly, managers in our fieldwork did not view market information knowledge as being directly valuable in building and using marketing implementation capabilities. This is consistent with perspectives in the strategy and marketing literature that view implementation as being dependent on external informational knowledge only indirectly via strategy content decisions and processes (e.g., Jaworski & Kohli, 1993; Kerin, Mahajan, & Varadarajan, 1990). Theory and our fieldwork therefore lead us to expect that

- H3: Export venture market information knowledge is positively related to the venture's marketing planning capabilities.

The marketing literature indicates that marketing planning capabilities concern the ability to conceive strategies that appropriately align available resources and capabilities with marketplace conditions in ways that enable the firm to achieve its strategic objectives (e.g., Day & Wensley, 1988; McKee, Conant, Varadarajan, & Mokwa, 1992). Consistent with this view, our fieldwork suggested that in the

context of export ventures, marketing planning capability involves both the clear articulation of export marketing goals and the thoroughness, skill, and creativity with which strategies are developed to achieve them. Conversely, the marketing literature indicates that marketing implementation capabilities concern the ability to translate marketing strategy decisions into consistent, goal-directed resource deployments (e.g., Bonoma, 1985; Noble & Mokwa, 1999). In the export venture context, our fieldwork indicated that managers viewed the processes of resource allocation, monitoring, and organizing activities as fundamental aspects of the venture's marketing implementation capability. While the management literature has often distinguished between strategy formulation and implementation, there is a broad recognition that planning and implementation are strongly related aspects of the overall conceptualization of "strategy." This was supported in our fieldwork interviews, where most managers expressed the view that "good strategy helps good implementation." The literature and our fieldwork therefore suggest that

H4: Export venture marketing planning capabilities are positively related to the venture's marketing implementation capabilities.

Our fieldwork indicated that while managers expected marketing planning capabilities to be related to marketing implementation capabilities, there was a recognition that the ability to formulate appropriate marketing strategy is a necessary but insufficient condition for enabling export ventures to successfully adapt to their market environments. This is consistent with the marketing literature indicating that successful firms are distinguished not only by well-conceived marketing strategies, but also by their ability to execute them (e.g., Day & Wensley, 1988; Kerin et al., 1990). Managers in our fieldwork consistently suggested that marketing planning capabilities were indirectly related to the venture's success in adapting to its market environment, with the venture's ability to successfully implement marketing strategy decisions being the key mediator. These literature and fieldwork viewpoints are consistent with the concept of "realized" strategy in the management literature, which recognizes that while "intended" strategy decisions guide subsequent behavior, it is only the enacted strategy that is actually "realized" that impacts the firm's ability to achieve its goals (e.g., Mintzberg, 1994; Pascale, 1984). We therefore expect that

H5: Export venture marketing implementation capabilities are positively related to the venture's adaptive performance.

METHODOLOGY

Research Design

To enhance variability and generalizability in the data used for hypothesis testing, we adopted a multicountry cross-sectional research design using data from export manufacturers located in the United Kingdom and China. Exporting firms from these two countries generated over \$540 billion in export merchandise sales in 2001, making the United Kingdom and China two of the largest exporting nations in the world (*Economist*, 2002). In addition, the United Kingdom and China have been identified as having significantly different national cultures that

impact how managers in those countries do business (e.g., Brouthers & Brouthers, 2001; Hofstede & Bond, 1988). Collecting data from two such different cultures should enhance the generalizability of the findings of our study (e.g., Hofstede, 1991). Service firms were excluded because of their idiosyncratic international expansion patterns and performance characteristics (Berthon, Pitt, Katsikeas, & Berthon, 1999). Since exporting is a stage of internationalization that is particularly appropriate for small and medium-sized business, and the overwhelming majority of global export trade is in manufacturing (e.g., World Bank, 2001), the target population in each country consisted of manufacturing firms ranging in size from 50 to 500 employees.

Measurement

In developing measures of export ventures' knowledge bases, architectural marketing capabilities, and adaptive performance, we synthesized perspectives from the KBV, exporting, and marketing literature, insights from our fieldwork interviews, and insights obtained from discussions with a number of academic researchers in the areas of knowledge management, international business, and marketing. Our initial measures were refined and pretested using face-to-face contexts to enhance face validity and were further refined through two quantitative data collection exercises. The Appendix contains the measures and their respective sources. In addition to measures of each of the constructs contained in our hypotheses, we collected data on competitive intensity to control for differences between the export markets served by each export venture.

Once finalized, the English version of the questionnaire was independently translated into Chinese by three native Chinese speakers. Where any differences were observed between the three translations, a discussion was held involving all three translators and the differences were resolved. This Chinese version of the questionnaire was then independently translated back into English by two different English-Chinese translators. Minor differences between the two back-translations were resolved by discussions between the two translators. Overall, the back-translated version matched the original English version very well, suggesting the quality of the translation (see Douglas & Craig, 1983). Once both the English and Chinese versions of the questionnaire were finalized, each was printed in a professionally typeset booklet.

Data Collection

In collecting data to test our hypotheses, our research design choices were guided by two characteristics of the export venture context revealed in the exporting literature and our fieldwork. First, firms do not separately report on the performance and operation of export venture business units in their published reports, and no other secondary data sources are available that provide indicants of the phenomena of interest in our study (e.g., Katsikeas et al., 2000). Second, most export ventures have a relatively small number of employees, usually with a single overall manager. Our interviews strongly indicated that among export venture personnel, only the export venture manager was knowledgeable concerning all of the knowledge base, architectural marketing capabilities, and adaptive performance phenomena

of interest in our study. Further, our interviews suggested that while informants other than the export venture manager may be able to provide data on individual constructs of interest in some export ventures, these informants would be unlikely to be as knowledgeable on these issues as the export venture manager. This indicated that an export venture manager key informant primary data collection design was appropriate for our study.

While the key informant data collection approach we adopted is the most widely used in organizational research, potential problems can be associated with collecting data on organizational phenomena from a single informant. We were therefore careful to follow accepted methodological guidelines commonly used to mitigate these potential problems concerning identifying and motivating the most knowledgeable key informants and designing and pretesting our measurement scales and survey instrument to maximize the validity of the data collected (e.g., Huber & Power, 1985). Following Huber & Power's (1985) guidelines, we paid particular attention to identifying appropriate key informants by name and job title. In line with prior research (e.g., Cavusgil & Zou, 1994; Myers, 1999) and on the basis of our fieldwork interviews, we identified the most knowledgeable individual as the export venture manager, the executive directly involved in and responsible for the particular export venture being studied. Where an appropriate export venture manager could not be identified through publicly available information sources, telephone calls were made to individual firms to identify an appropriately knowledgeable export venture manager key informant. Our interviews indicated that the job titles of such managers in Chinese export ventures varied much more widely than in the United Kingdom. This made it difficult to identify appropriately knowledgeable key informants in China from public sources. We therefore contacted the president of each firm in the Chinese sample, who under the Chinese "president responsibility system" is the most knowledgeable contact concerning strategy and business operations in Chinese firms (Lukas, Tan, & Hult, 2001). The nature of the study was explained to each firm's president, and each was shown a copy of the survey instrument and asked to identify an appropriately knowledgeable key informant in one of the firm's export ventures. We then contacted each identified informant to explain the purpose of the study, and to solicit participation with offers of a report on study findings and guarantees of confidentiality.

In the United Kingdom, the data were obtained through a mail survey of 567 exporting firms randomly selected from publicly available sources such as Dun and Bradstreet directories. A survey packet was mailed to the named export venture manager we identified in each firm. For firms not responding to the initial mailing, a second complete mailing was performed. In China, the sampling frame consisted of export manufacturers listed in the *Directory of Jiangsu Manufacturing Firms*. Jiangsu is one of the major exporting provinces of China, and exporting firms in this province are considered representative of Chinese exporters. Of the export venture managers identified by company presidents we contacted, 223 agreed to provide data for our study. Due to particular confidentiality fears concerning proprietary information in China, most Chinese managers are reluctant to complete mail surveys. Since obtaining high response rates among highly knowledgeable informants is key to ensuring high-quality data in key informant research designs (Huber & Power, 1985), we hand-delivered surveys to each of the 223 export

venture managers identified. The conversations permitted by this personal contact also enabled us to confirm the knowledgeability of the key informant identified by the company president, and to mitigate any remaining concerns on the part of the informant that might have limited the response rate achieved. The completed surveys were subsequently collected by personal pickups scheduled at the time of drop-off.

The mail survey in the United Kingdom resulted in 243 completed surveys, representing a 43% response rate. The onsite survey in China yielded 198 completed surveys, a response rate of over 88%. In addition to our extensive efforts to ensure that we identified and motivated appropriately knowledgeable key informants, we conducted a post hoc check on respondent knowledgeability. We asked survey respondents to rate their knowledge of their own export venture's strategy, resources, and capabilities, and those of their export market competitors, in two separate questions using 7-point scales ranging from "low knowledge" to "high knowledge." To ensure the quality of our dataset, 19 respondents from the U.K. sample and 25 respondents from the Chinese sample who reported insufficient knowledgeability levels (i.e., a score of less than 4 on the 7-point scales for either of these questions) were eliminated from further analysis (e.g., Stump & Heide, 1996). In the final dataset (287 export ventures in the United Kingdom and 173 in China), the mean informant scores in each sample were above 5.3 on the 7-point scales for both knowledgeability questions, indicating a high quality of response from our key informants. Finally, analysis of nonresponse bias was performed using the extrapolation approach recommended by Armstrong & Overton (1977). Tests revealed no significant differences between early and late respondents on any of the constructs in either the U.K. or Chinese dataset, suggesting that nonresponse bias is unlikely to be present in either sample.

RESULTS

Measurement Assessment

To assess both the measurement properties of our scales and the equivalence of measures obtained from the U.K. and Chinese samples, we conducted a two-group confirmatory factor analysis (CFA) using the maximum likelihood (ML) estimation procedure in *EQS* (Bentler, 1995). Specifically, following the recommendations of Gerbing & Anderson (1988) and Singh (1995), we estimated a measurement model in which (a) each item was restricted to load only on its a priori factor; (b) the factors themselves were allowed to correlate with one another; and (c) all item factor loadings were constrained to be equal between the U.K. and Chinese samples. Table 1 contains the results of this two-group CFA. To assess the measurement model, we followed the procedure recommended by Bagozzi & Yi (1988). First, we checked the summary statistics of the items for both groups and found no evidence to suggest violation of the normal distribution assumption. Next, we looked at the *EQS* output and found that the ML procedure converged properly and there was no condition code. We then examined model fit statistics, which showed evidence of good fit with the data as indicated by a $\chi^2 = 1050.55$, 582 d.f., $p > .001$, a comparative fit index (CFI) of .92, a normed fit index (NFI) of .84, an incremental fit index (IFI) of .92, and a root mean square error of approximation (RMSEA) of .05. These

Table 1: Measurement model and confirmatory factor analysis for U.K. and Chinese samples.

Constructs and Items	Parameter	U.K. Sample		Chinese Sample	
		Standardized Coefficient	t-Value	Standardized Coefficient	t-Value
Individual Experiential Knowledge					
Knowledge of export marketing personnel	λ_{X11}	.797	18.162	.823	18.162
Experience of our export marketing personnel	λ_{X12}	.919	21.631	.875	21.631
The skills of our export marketing people	λ_{X13}	.922	21.511	.858	21.511
Venture Experiential Knowledge					
Company experience with operating in this export market	λ_{X21}	.692	11.924	.819	11.924
International orientation of our company's culture	λ_{X22}	.789	16.133	.784	16.133
Company's international experience	λ_{X23}	.872	17.453	.780	17.453
Venture Market Information Knowledge					
Customer knowledge in this export market	λ_{X31}	.762	17.676	.835	17.676
Knowledge of competitors in this market	λ_{X32}	.778	16.340	.719	16.340
Information related to doing business in this market	λ_{X33}	.892	22.143	.951	22.143
Knowledge of distributors in this export market	λ_{X34}	.810	18.521	.840	18.521
Marketing Planning Capabilities					
Export marketing planning skills	λ_{X41}	.823	18.910	.833	18.910
Setting clear export marketing goals	λ_{X42}	.831	19.447	.856	19.447
Formulating creative export marketing strategies	λ_{X43}	.859	19.582	.826	19.582
Thoroughness of export marketing planning process	λ_{X44}	.883	20.519	.853	20.519
Marketing Implementation Capabilities					
Effectively translating planned export marketing strategies into action	λ_{X51}	.802	17.868	.800	17.868
Allocating appropriate resources to execute export marketing strategies	λ_{X52}	.797	18.329	.835	18.329

Table 1: (continued) Measurement model and confirmatory factor analysis for U.K. and Chinese samples.

Constructs and Items	Parameter	U.K. Sample		Chinese Sample	
		Standardized Coefficient	t-Value	Standardized Coefficient	t-Value
Monitoring the performance of export marketing strategies	λ_{x53}	.798	17.675	.796	17.675
Organizing to deliver planned export marketing strategies effectively	λ_{x54}	.841	19.085	.832	19.085
Competitive Intensity					
Competition in this export market is cutthroat	λ_{x61}	.818	18.582	.880	18.582
There are many "promotion" wars in this export market	λ_{x62}	.757	16.081	.780	16.081
Price competition is a hallmark of this export market	λ_{x63}	.697	15.480	.793	15.480
One hears of a new competitive move in this market almost every day	λ_{x64}	.704	14.469	.716	14.469
Adaptive Performance					
Responding to competitors' product changes in this export market	λ_{x71}	.727	14.763	.700	14.763
Time to market for new export venture products	λ_{x72}	.784	17.316	.813	17.316
Number of successful new export venture products	λ_{x73}	.821	18.562	.851	18.562
Revenue from new export venture products (less than three years old)	λ_{x74}	.716	15.321	.751	15.321
Overall Fit:		Two-Group Model χ^2 1090.545, 582 d.f., $p < .001$		CFI = .915 NFI = .836 RMSEA = .050	IFI = .916

two-group CFA results indicate measurement equivalency for our constructs across the U.K. and Chinese samples.

To assess the reliability of our measures, we calculated the composite reliability of each scale, following the procedures recommended by Fornell and Larcker (1981) using the formula

$$CR_{\eta} = \frac{(\sum \lambda\gamma_i)^2}{(\sum \lambda\gamma_i)^2 + \sum \varepsilon_i}, \quad (1)$$

where

CR_{η} = composite reliability for scale η ;

$\lambda\gamma_i$ = standardized loading for scale item γ_i , and

ε_i = measurement error for scale item γ_i .

Each of our measures exhibited good reliability with composite reliabilities for the seven scales ranging from .74 to .86 (Table 2), and item factor loadings (Table 1) ranging from .69 to .95 ($p < .01$). We assessed the discriminant validity of our measures by examining the average variance extracted for each construct and comparing it to the shared variance for all possible pairs of constructs (Anderson & Gerbing, 1988; Bagozzi & Yi, 1988). Average variance extracted was calculated using the following formula:

$$V_{\eta} = \frac{\sum \lambda\gamma_i^2}{\sum \lambda\gamma_i^2 + \sum \varepsilon_i}, \quad (2)$$

where

V_{η} = average variance extracted for η ;

$\lambda\gamma_i$ = standardized loading for scale item γ_i , and

ε_i = measurement error for scale item γ_i .

The average variances extracted ranged from 50.1% to 64.8% (Table 2), while the shared variances observed between the constructs ranged from .00% to 46.24%, indicating good discriminant validity among our measures. Where significant correlations were observed between constructs, we also conducted additional pairwise discriminant validity assessments. This involved comparing χ^2 statistics in measurement models in which the covariance coefficient between the two constructs was allowed to vary and then fixed at one (Anderson & Gerbing, 1988; Bagozzi, Yi, & Phillips, 1991). Changes in χ^2 were large and significant in each of the pairwise tests, suggesting discriminant validity in each model. This indicates that each of our measures has discriminant validity vis-à-vis the other scales in our study.

Hypothesis Testing

Having demonstrated the reliability and validity of our measures and their equivalence across the two samples, we tested our hypotheses using structural equation models. We first assessed whether the relationships in the U.K. and Chinese samples

Table 2: Descriptive statistics.

Construct	U.K. Sample				Chinese Sample			
	Mean	Standard Deviation	Composite Reliability	Variance Extracted	Mean	Standard Deviation	Composite Reliability	Variance Extracted
Individual Experiential Knowledge	4.619	1.419	0.80	57.9%	5.325	0.980	0.85	64.8%
Venture Experiential Knowledge	4.731	1.111	0.74	50.3%	5.357	0.996	0.78	54.3%
Venture Market Information Knowledge	4.329	1.130	0.81	52.3%	5.255	0.992	0.86	60.8%
Marketing Planning Capabilities	4.100	1.091	0.84	57.1%	4.964	0.943	0.86	60.0%
Marketing Implementation Capabilities	4.145	1.345	0.84	56.1%	5.043	0.904	0.80	53.6%
Competitive Intensity	4.390	0.999	0.76	50.1%	4.877	1.368	0.82	54.4%
Export Adaptive Performance	4.809	1.313	0.81	52.2%	4.811	1.024	0.83	55.3%

were the same by examining a two-group structural model in which the measures were held to be invariant and the parameter estimates for the hypothesized paths between constructs were constrained to be equal in the two samples. This resulted in a model with $\chi^2 = 1173.53$, 598 d.f. We then tested for differences in the hypothesized relationships across the two models. This was performed in two ways. First, the two-group structural model was reestimated allowing all eight parameters for the paths between constructs to vary (e.g., Anderson & Gerbing, 1988). The large and significant change in χ^2 ($\chi^2\Delta = 33$, d.f. $\Delta = 8$) indicated that the paths representing the hypothesized relationships in the two samples were not the same. This indicated that structural equation models (SEMs) for testing our hypotheses should be run on the U.K. and Chinese samples independently (e.g., Anderson & Gerbing, 1988).

Second, in a series of two-group models we allowed the model equivalence parameter for the hypothesized relationships between the constructs to vary one at a time in eight separate analyses. Five of the hypothesized relationships demonstrated significant differences between the U.K. and Chinese samples, while three of the hypothesized relationships were found to be the same across the two samples. Differences in the hypothesized paths between the two samples concerned H1b: Individual Experiential Knowledge to Marketing Implementation Capabilities ($\chi^2\Delta = 3.82$, d.f. $\Delta = 1$); H2b: Venture Experiential Knowledge to Marketing Implementation Capabilities ($\chi^2\Delta = 5.52$, d.f. $\Delta = 1$); H4: Marketing Planning Capabilities to Marketing Implementation Capabilities ($\chi^2\Delta = 8.46$, d.f. $\Delta = 1$); H5: Marketing Implementation Capabilities to Adaptive Performance ($\chi^2\Delta = 14.87$, d.f. $\Delta = 1$); and the Competitive Intensity control variable to Export Adaptive Performance ($\chi^2\Delta = 13.17$, d.f. $\Delta = 1$). Hypothesized paths that were observed to be the same across the two samples concerned H1a: Individual Experiential Knowledge to Marketing Planning Capabilities ($\chi^2\Delta = 0.31$, d.f. $\Delta = 1$); H2a: Venture Experiential Knowledge to Marketing Planning Capabilities ($\chi^2\Delta = 2.04$, d.f. $\Delta = 1$); and H3: Venture Market Information Knowledge to Marketing Planning Capabilities ($\chi^2\Delta = 0.07$, d.f. $\Delta = 1$). These analyses further indicated that independent SEM analyses should be performed for the U.K. and Chinese samples in testing our hypotheses.

To test our hypotheses we therefore examined separate structural models for the U.K. and Chinese data with paths representing the hypothesized direct and mediated relationships shown in Figure 2, along with a direct path from our Competitive Intensity control variable to Adaptive Performance. Since the two-group CFA indicates our measures are equivalent, the coefficients of the structural models can be compared across the two samples (Steenkamp & Baumgartner, 1998). The results of these analyses are provided in Figures 3 and 4.

Our hypothesis-testing structural equation model indicated a good overall fit with the data in the U.K. sample, producing fit indices of $\chi^2 = 511.87$, 285 d.f., $p < .01$, CFI = .93, NFI = .93, IFI = .93, and RMSEA = .06. The estimates of the standardized path coefficients in Figure 3 indicate support for all of the seven hypothesized paths. In the Chinese sample, the results of our structural equation model analysis also indicate a good overall fit with the data, producing fit indices of $\chi^2 = 506.78$, 285 d.f., $p < .01$, CFI = .92, NFI = .92, IFI = .92, and RMSEA = .07. The estimates of the standardized path coefficients in Figure 4 also indicate

Figure 3: U.K. sample structural model.

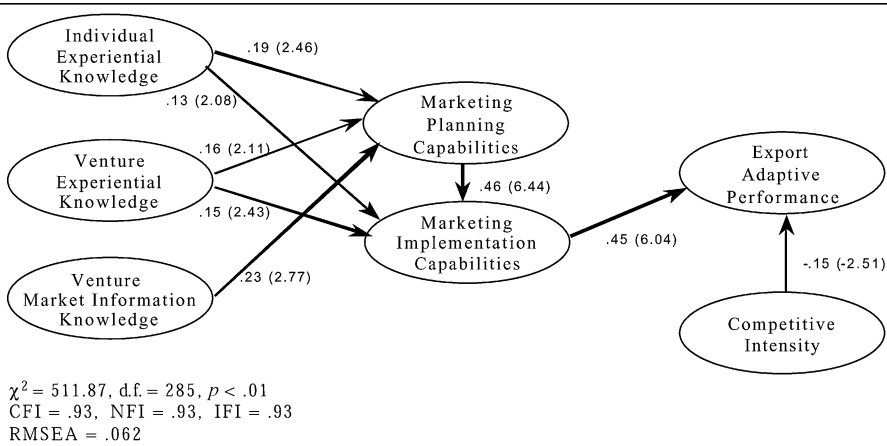
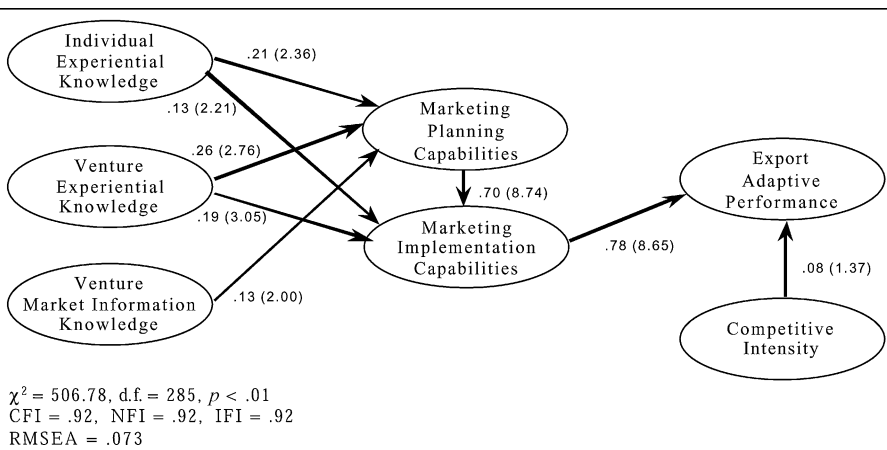


Figure 4: Chinese sample structural model.



support for each of the seven hypothesized paths. As seen in Figures 3 and 4, the strength of several of the hypothesized paths varies between the U.K. and Chinese samples. For example, the path coefficients in the Chinese sample are stronger than those in the U.K. sample for the path between the Marketing Planning and Marketing Implementation Capabilities (path coefficient for China: .70, $t = 8.74$ vs. United Kingdom: .45, $t = 6.44$) and the path between Marketing Implementation Capabilities and Adaptive Performance (path coefficient for China: .78, $t = 8.65$ vs. United Kingdom: .46, $t = 6.04$). However, in terms of hypothesis testing, all of the path coefficients for the hypothesized paths are significant and in the hypothesized direction in both samples. The primary difference between the two models concerns the path between the Competitive Intensity control variable and

Adaptive Performance that was found to be significant and negative in the U.K. sample (path coefficient $-.15$, $t = 2.51$), but insignificant in the Chinese sample (path coefficient $.08$, $t = 1.37$). This may reflect differences in the demand for exported goods from the two countries, with demand for Chinese export goods growing much more rapidly than that for U.K. exports (Top exporters, 2002).

DISCUSSION AND IMPLICATIONS

In both the U.K. and Chinese samples, our results provide empirical support for KBV theory predictions and qualitative fieldwork insights concerning the use of the export venture's international experiential knowledge, informational export market knowledge, and the experiential knowledge of individual export venture personnel in the development and use of the export venture's marketing planning and marketing implementation capabilities. Specifically, we find support for the hypothesized positive relationships between individual-level experiential knowledge relevant to marketing products in the target foreign market within an export venture and the venture's marketing planning (path coefficients are United Kingdom: $.19$, $t = 2.46$; China: $.21$, $t = 2.36$) and marketing implementation capabilities (path coefficients are United Kingdom: $.13$, $t = 2.08$; China: $.13$, $t = 2.21$). Our results also support hypothesized positive relationships between venture-level experiential knowledge relevant to the foreign market and the venture's marketing planning (path coefficients are United Kingdom: $.16$, $t = 2.11$; China: $.26$, $t = 2.76$) and marketing implementation capabilities (path coefficients are United Kingdom: $.15$, $t = 2.43$; China: $.19$, $t = 3.05$). Supporting both KBV and marketing theory predictions, our analyses also support the hypothesized positive relationship between possession of venture-level informational knowledge concerning the target export market and the level of the venture's marketing planning capabilities (path coefficients are United Kingdom: $.23$, $t = 2.77$; China: $.13$, $t = 2.00$).

In terms of the architectural marketing capabilities and adaptive performance of export ventures, our results in both the U.K. and Chinese samples also support dynamic capabilities, marketing, and strategic management theory predictions concerning interrelationships between marketing planning and implementation capabilities and the performance impact of superior marketing implementation capabilities. We find that the marketing planning capabilities of export ventures are strongly positively related to their marketing implementation capabilities (path coefficients are United Kingdom: $.46$, $t = 6.44$; China: $.70$, $t = 8.74$). In turn, we find that the marketing implementation capabilities of export ventures are strongly related to their adaptive performance (path coefficients are United Kingdom: $.45$, $t = 6.04$; China: $.78$, $t = 8.65$). Overall, our findings therefore support KBV theory propositions that individual- and organizational-level experiential and informational knowledge are important and valuable components of an organization's knowledge base. These knowledge base elements indirectly drive organizational performance by enabling the development and use of organizational capabilities that allow firms to successfully adapt to their environment (e.g., Kogut & Zander, 1992; Grant, 1996a).

While the data used to test our hypotheses are cross-sectional, and therefore cannot provide empirical insights into the longer-run adaptive performance of

the export ventures studied, the literature indicates that export ventures' knowledge resources and architectural marketing capabilities should be sources of sustainable competitive advantage for a number of reasons. First, the experiential knowledge components of an export venture's knowledge base (e.g., Kogut & Zander, 1992) and its architectural marketing capabilities (e.g., Galunic & Rodan, 1998) are largely tacit in nature and are also path-dependent on the history of individual personnel and the organization, hindering rivals' attempts at imitation (e.g., Nelson & Winter, 1982; Zander & Kogut, 1995). Second, the relationship between an organization's knowledge base and its organizational capabilities is socially complex, and often causally ambiguous, forming an "asset interconnectedness" that hinders competitive imitation (e.g., Teece et al., 1997). Third, theory indicates that, due to significant learning effects, knowledge resources and knowledge-based capabilities are enhanced rather than diminished by use, creating "time compression" problems for would-be imitators (e.g., Grant, 1996a; Teece & Pisano, 1994). This barrier to competitive imitation may be particularly strong in the context of architectural marketing capabilities where experiential learning is market based (e.g., Day, 1991), which is a particularly efficient way of acquiring and upgrading both organizational-level experiential and market information knowledge and architectural marketing capabilities (e.g., Day, 1997; Slater & Narver, 1995).

Our study may be viewed as having three major implications for knowledge management theory development and testing. First, our qualitative fieldwork and quantitative data analysis results highlight the important role of organizational capabilities in understanding how an organization's knowledge base impacts its performance outcomes. While these indirect effects of knowledge resources on organizational performance have been theorized in the KBV literature (e.g., Kogut & Zander, 1992), few studies have empirically examined this important phenomenon (e.g., Subramaniam & Venkatraman, 2001). Our findings suggest that empirical investigations of relationships between the types and levels of knowledge in an organization's knowledge base and organizational performance may reveal little unless the organization's capabilities relevant to the environment in which it operates are also considered (cf. Han, Kim, & Srivastava, 1998). An important implication of our findings is that efforts to use the organization's knowledge base to develop relevant capabilities that enable the organization to better adapt to its environment should be an important focus of knowledge management strategies. In the exporting context, our results indicate that such knowledge management efforts should focus in particular on the development and enhancement of the architectural marketing capabilities of export ventures.

Second, our findings provide new empirical insights into the concept of organizational memory. Organizational memory has been conceptualized as an accessible repository for an organization's collective knowledge (e.g., Day, 1994; Sinkula, 1994; Walsh & Ungson, 1991). Despite increasing theoretical attention in the literature, organizational memory has not been the subject of a much empirical study (e.g., Hult, 1998; Moorman & Miner, 1997). In operationalizing organizational memory, the empirical studies undertaken have often used indirect indicators of memory such as the size and age of the organization (e.g., Berthon, Pitt, & Ewing, 2001). In terms of the logic of the theoretical arguments presented, and the operationalization of key constructs, our study may be holistically viewed as an

assessment of organizational memory and its links with performance outcomes. For example, the experience of the organization, its informational knowledge, and knowledge embedded in the organization's capabilities are all phenomena that have been viewed as important aspects of organizational memory (e.g., Moorman & Miner, 1997; Sinkula, 1994). As such, our findings offer both insights into how theoretical organizational memory predictions can be operationalized, as well as initial empirical support for propositions linking organizational memory with organizational performance.

Third, while marketing studies have suggested the importance of market-based informational knowledge (e.g., Jaworski & Kohli, 1993; Slater & Narver, 1994), our results extend existing knowledge by indicating the importance of individual- and organizational-level experiential knowledge in developing and using architectural capabilities that enable organizations to adapt to their environment. In addition, supporting marketing theory propositions, our findings extend knowledge management theory by indicating that while most previous KBV empirical studies have focused on scientific and technical knowledge, knowledge concerning the market environment may be a particularly valuable element of the knowledge base of the firm. From an exporting perspective, firm-level experiential knowledge of the market environment has been examined in international business as a driver of strategic choices concerning foreign market selection and foreign market entry mode (e.g., Eriksson et al., 1997). Our study extends existing knowledge in this area by examining the role of individual-level as well as organizational-level experiential knowledge simultaneously, and by linking this knowledge with adaptive capabilities rather than just market entry choices. Our study therefore represents one of the first KBV empirical studies to simultaneously combine consideration of both experiential and informational knowledge at the individual as well as the organizational level. Our findings indicate that, in furthering theoretical understanding of the relationship between the knowledge base of the firm and performance outcomes, it is necessary to simultaneously examine both different levels and different types of knowledge present in the firm's knowledge base. From a managerial perspective, this suggests that knowledge management strategies need to pay particular attention to building the organization's knowledge base in terms of the acquisition of *both* individual- and organizational-level experiential knowledge and organizational-level informational knowledge.

LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

Three limitations of our study result from trade-off decisions required in research of this type. First, while we gave particular attention to following methodological guidelines in locating appropriate informants, ensuring key informant knowledgeability, guaranteeing anonymity, and designing our survey to maximize respondent objectivity, the potential still exists for informant bias in our data. While obtaining data from secondary sources or multiple informants would have been ideal, the exporting literature and our fieldwork interviews indicate that this is not a realistic option in the context of export ventures (Katsikeas et al., 2000). Nonetheless, in seeking to generalize our findings, future research in different organizational contexts may wish to utilize multi-informant primary data collection and secondary data-based research designs. Second, we test our hypotheses with cross-sectional

data and are therefore unable to empirically impute causality in the relationships examined or to empirically assess the sustainability of the adaptive performance outcomes observed. Having established these linkages using cross-sectional data, it may be worthwhile utilizing longitudinal research designs in future research to empirically confirm causality and assess performance outcomes over time. Third, by focusing specifically on an extensive examination of export venture knowledge resources and architectural marketing capabilities, we were unable to control for differences between export ventures in terms of other types of resources and capabilities and other venture-specific phenomena such as export strategy choices. As our ability to develop valid and reliable measures of knowledge resources and organizational capabilities improves, the potential for controlling for a wider range of factors in future studies should increase.

While a number of potential avenues for future research flow from our results, we believe two hold particular promise for developing theoretical knowledge and providing insights for managers. First, our research indicates that the possession of a knowledge base comprising informational and experiential knowledge relevant to the market environment of the firm is an important source of competitive advantage. Marketing studies have examined mechanisms for the acquisition of such informational knowledge at the firm level. However, we have little understanding of how firms can best acquire the experiential knowledge elements of their knowledge base. At the firm level a key unanswered question is how firms should design their learning processes to maximize the development of relevant firm-level experiential knowledge. For example, are market experiments a better way of generating experiential knowledge than more traditional market research studies? At an individual level, a key question for firms concerns the human resource practices that facilitate the best mix of individual-level experiential knowledge within the firm. For example, should experience in a particular marketplace be more heavily weighted than other factors in staffing an export venture? Are there diminishing returns to individual experiential knowledge gained in a marketplace over time that suggest appropriate rotation periods for managers in their exposure to different markets? Answers to these questions would greatly enhance theoretical development and managerial practice in knowledge management.

Second, our findings indicate that an important next step in knowledge management development requires the examination of how different components of a firm's knowledge base are transformed into organizational capabilities that enable an organization to adapt to its environment. This is consistent with recent calls in management theory for a greater focus on how organizations acquire resources and develop capabilities that match environmental conditions (e.g., Eisenhardt & Martin, 2000). In addressing this question, our findings indicate that the processes by which environmentally relevant informational and experiential knowledge within the firm are transferred and combined to create organizational capabilities should be an important focus for future research in developing KBV theory. While our study indicates that individual-level informational knowledge is easily and quickly shared and transferred in export ventures, this may not be true in other types of organizations. For example, studies of information dissemination in the marketing and new product development literature indicate that in more centralized and formalized organizations (e.g. Jaworski & Kohli, 1993; Moenaert & Souder, 1990), such individual-to-organization knowledge transfers may be less

effective and efficient. A central question for future knowledge development therefore concerns the identification of management processes appropriate for different organizational, environmental, and strategic contingencies that enable the speedy and efficient transfer of experiential and informational knowledge between individuals and the organization. Such research would provide valuable theoretical and managerial insights in this important knowledge management domain.

CONCLUSION

Drawing on insights from the literature and fieldwork interviews, we contribute to knowledge management theory and practice by providing the first assessment of a number of key KBV theory propositions, and extending knowledge management theory into the increasingly important context of export ventures. Our results provide empirical support for KBV theory predictions and qualitative fieldwork insights concerning the importance in the knowledge base of export ventures of international experiential knowledge, informational export market knowledge, and the experiential knowledge of individual export venture personnel. Our findings indicate that such knowledge bases are valuable because they allow export ventures to develop and utilize marketing planning and marketing implementation capabilities that enable the venture to adapt to the requirements of its export market. [Received: March 27, 2002. Accepted: February 3, 2003.]

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APPENDIX: MEASUREMENT SCALES

Scale and Source	Indicators
Individual Experiential Knowledge ^a (New Scale)	Knowledge of export marketing personnel Experience of our export marketing personnel The skills of our export marketing people
Venture Experiential Knowledge ^a (New Scale)	Company experience with operating in this export market International orientation of our company's culture Company's international experience
Venture Market Information Knowledge ^a (New Scale)	Customer knowledge in this export market Knowledge of competitors in this market Information related to doing business in this market Knowledge of distributors in this export market
Marketing Planning Capabilities ^b (Adapted from Piercy & Morgan, 1994)	Export marketing planning skills Setting clear export marketing goals Formulating creative export marketing strategies Thoroughness of export marketing planning process
Marketing Implementation Capabilities ^b (Adapted from Bonoma, 1985)	Effectively translating planned export marketing strategies into action Allocating appropriate resources to execute export marketing strategies Monitoring the performance of export marketing strategies Organizing to deliver planned export marketing strategies effectively
Competitive Intensity ^b (Jaworski & Kohli, 1993)	Competition in this export market is cutthroat There are many "promotion" wars in this export market Price competition is a hallmark of this export market One hears of a new competitive move in this market almost every day
Adaptive Performance ^a (Adapted from Walker & Ruekert, 1987)	Responding to competitors' product changes in this export market Time to market for new export venture products Number of successful new export venture products Revenue from new export venture products (less than three years old)

^aSeven-point scale with anchors "much worse" to "much better"

^bSeven-point scale with anchors "strongly agree" to "strongly disagree"

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