



Capabilities as a mediator linking resources and the international performance of entrepreneurial firms in an emerging economy

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Abstract

This study investigates an under-researched topic: the relationships between capabilities, resources, and international performance among entrepreneurial firms in an emerging economy. We combine the resource-based view of the firm and the capability-building perspective of rent creation to shed light on the crucial role of firm-specific capabilities that transform key resources into performance outcomes. Employing a large sample of Chinese entrepreneurial firms, our investigation demonstrates that while the resources of institutional capital and managerial ties are important in the internationalization effort, their effects on international performance are channeled through each firm's adaptive capability. This adaptive capability is the firm's ability to coordinate, recombine, and allocate resources to meet the different requirements of foreign markets. Specifically, our research is able to demonstrate support for the mediating role of capabilities in the relationship between resources and international performance. The implications of these findings for theoretical development and future research are discussed.

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INTRODUCTION

Internationalization is an important growth strategy for entrepreneurial firms around the world (Beamish & Lupton, 2009; Lu & Beamish, 2001; Oviatt & McDougall, 1999; Peng, 2001; Ruzzier, Hisrich, & Antoncic, 2006; Yamakawa, Peng, & Deeds, 2008). The resource-based view (RBV) suggests that, to achieve superior performance in an international market, an entrepreneurial firm needs to develop competitive advantages that create value through unique products or services that satisfy foreign customers (Dhanaraj & Beamish, 2003; Li & Ogunmokun, 2001; Lu & Beamish, 2001; Peng, 2001; Ruzzier et al., 2006). Numerous studies indicate that, because of their small size and limited financial and managerial personnel resources, entrepreneurial firms actively seek resources from the external environment and inter-firm networks (Bruton, Dess, & Janney, 2007; Chetty & Agndal, 2007; Elango & Pattnaik, 2007; Luo, 2003). Research also shows that entrepreneurial firms can take advantage of institutional capital and managerial ties to obtain the

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resources necessary for the exploration of opportunities in foreign markets (Liesch & Knight, 1999; Peng, 2001; Peng, Wang, & Jiang, 2008; Ruzzier *et al.*, 2006; Yamakawa *et al.*, 2008; Yli-Renko, Autio, & Tontti, 2002; Zhou, Wu, & Luo, 2007). The present study views institutional capital as the resources that reside in the firm's institutional environment (Bresser & Millonig, 2003; Oliver, 1997), and defines managerial ties as the managers' social relations, contacts, and networks across organizations (Geletkanycz & Hambrick, 1997; Peng & Luo, 2000). In emerging economies both institutional capital and managerial ties are especially important to entrepreneurial firms, as market mechanisms for resource allocation are typically either absent or underdeveloped (Khanna & Palepu, 2000; Peng, Sun, Brian, & Chen, 2009).

While possession of resources is important, the RBV suggests that capabilities are a source of inimitable and sustainable competitive advantages to the firm, because they transform resources into products or services superior to those of competitors (Amit & Schoemaker, 1993; Barney, 1991; Grant, 1991; Makadok, 2001). Research indicates that activities such as acquiring, absorbing, coordinating, and integrating resources from external and partner organizations can enhance capabilities (Ethiraj, Kale, Krishnan, & Singh, 2005; Priem & Butler, 2001; Sirmon, Hitt, & Ireland, 2007; Teece, Pisano, & Shuen, 1997). However, despite the documented relationship between resources and international performance, little is known about how entrepreneurial firms can capitalize on those resources that relate to distinctive capabilities to achieve superior international performance.

To address this research gap we combine the RBV with the capability-building perspective of rent creation (Amit & Schoemaker, 1993; Eisenhardt & Martin, 2000; Ethiraj *et al.*, 2005; Makadok, 2001; Teece *et al.*, 1997) to examine the firm-specific capabilities that transform the resources of institutional capital and managerial ties into successful internationalization. We propose that capabilities can act as intermediate variables between such resources and international performance. Employing a large-scale sample of Chinese private entrepreneurial firms that have internationalized, we focus on two specific capabilities (information acquisition capability and adaptive capability), and their relationships to two resources (institutional capital and managerial ties) and international performance. Information acquisition capability is the firm's ability to collect, absorb, and integrate

information to understand customer needs and market opportunities. Adaptive capability is the firm's ability to coordinate, recombine, and allocate resources to meet the changes required by foreign customers and/or suppliers. We select these capabilities because prior researchers have identified them as fundamental and important to an entrepreneurial firm's decision-making and task accomplishment in exploring foreign market opportunities (Belich & Dubinsky, 1995; Dow, 2006; Evangelista, 1996; Liesch & Knight, 1999; Oktemgil & Greenley, 1997; Yeoh, 2000). While the theoretical links of interest in this study are not necessarily confined to the Chinese context, China's unique institutional environment and the cultural orientation of the network relationships among Chinese entrepreneurial firms provide an appropriate platform to test our hypotheses.

This investigation yields several significant contributions to the literature. First, the present study extends the understanding of the mediating role of capabilities in the transformation of resources into sustainable competitive advantages that enable a firm to outperform its competitors in international markets (Newbert, 2008; Peng & Luo, 2000; Peng *et al.*, 2008). It also provides a better understanding of the internationalization of entrepreneurial firms. Prior research has tended to focus on large multinationals. However, scholars increasingly recognize that the internationalization of entrepreneurial firms may be different from that of large multinationals, because limited resources constrain the entrepreneurial firms' choice of strategic options in internationalization (Zhou *et al.*, 2007). Finally, this study provides new insights into the unique functions of institutional capital and managerial ties in the internationalization of entrepreneurial firms in emerging economies. To date, research into the internationalization of firms has focused mainly on firms in developed economies rather than those in emerging economies (Bruton & Lau, 2008; Lau & Bruton, 2008, Yamakawa *et al.*, 2008; Yiu, Lau, & Bruton, 2007). We cannot assume that the internationalization of entrepreneurial firms in emerging economies is the same as that of such firms in mature economies, because the institutional environments are different, and the former firms face greater resource constraints (Peng, 2003; Yamakawa *et al.*, 2008). The need for greater understanding in this area is especially important as the internationalization of entrepreneurial firms in emerging economies is rapidly expanding (Lau & Bruton, 2008; Peng *et al.*, 2008; Yamakawa *et al.*, 2008).

THEORETICAL BACKGROUND AND HYPOTHESES

Theoretical Background

The RBV literature presents divergent views about resources and capabilities (Priem & Butler, 2001). Some researchers tend to view the terms as synonymous (Newbert, 2008). This combining of the two concepts is based in part on Barney's (1991) definition of resources, which lists together firm assets, capabilities, processes, attributes, information, and knowledge. Based on this view, a firm can develop and sustain its competitive advantage only if the firm can create an idiosyncratic pool of resources.

However, the dominant view (e.g., Amit & Schoemaker, 1993; Day, 1994; Grant, 1991; Makadok, 2001) is that resources and capabilities are clearly distinguishable from one another. Grant (1991) argues that resources are stocks of tangible or intangible assets, such as fixed assets, information, brand, technology, and human capital, which firms use as inputs into production processes for conversion into products or services. Makadok (2001) defines a capability as "a special type of resource – specifically an organizationally embedded non-transferable, firm-specific resource whose purpose is to improve the productivity of the *other* resources possessed by the firm" (Makadok, 2001: 389; emphasis in original).

More specifically, Amit and Schoemaker (1993) argue that firm-specific capabilities "can abstractly be thought of as 'intermediate goods' generated by the firm to provide enhanced productivity of its resources" (Amit & Schoemaker, 1993: 35; emphasis in original). Thus capabilities are different from resources as they enable firms to create economic rent more effectively than rivals can by enhancing the productivity of firm resources. In particular, "the capability-building mechanism affects economic profit *only after* the acquisition of resources and can *not* do so if such resource acquisitions fail to materialize" (Makadok, 2001: 389; emphasis in original). Teece et al. (1997) propose similar distinctions between resources and capabilities, and argue that sustainable competitive advantage involves not only what assets a firm owns but also how the firm integrates and transforms such assets through appropriate capabilities, since capabilities are difficult to acquire and imitate.

Recently, Sirmon et al. (2007) have proposed a causal flow of resource management model that describes the set of sequential activities through

which a firm acquires resources, internally and externally, and then constructs capabilities that transform those resources into competitive advantages by providing superior products or services to customers. The mere possession of resources does not guarantee the development of sustainable competitive advantages, as those resources can be traded and are transferable across organizational boundaries. Rather, the capabilities translate those resources into competitive advantages that enable the firm to achieve superior performance, because capabilities are intertwined with tacit knowledge embedded in employees within the organization, and are therefore inimitable and difficult to transfer to other firms (Ethiraj et al., 2005; Makadok, 2001; Sirmon et al., 2007).

Based on the above literature, we define capabilities as the firm's abilities to absorb, integrate, and transform internal and external resources into sustainable competitive advantages that, in turn, drive superior performance (Amit & Schoemaker, 1993; Grant, 1991; Sirmon et al., 2007; Teece et al., 1997). We propose a conceptual model, presented in Figure 1, which posits that capabilities act as intermediate variables between international performance and resources such as institutional capital and managerial ties. We argue that the positive influences of institutional capital and managerial ties on the performance outcome of an entrepreneurial firm's internationalization strategies are channeled by information acquisition and adaptive capabilities (Evangelista, 1996; Westhead, Wright, & Ucbasaran, 2001).

Previous studies have noted that, because of their disadvantageous position in the market, entrepreneurial firms often have difficulties in obtaining key resources, such as information on foreign markets and financial capital, which are crucial to the exploration of foreign market opportunities (Westhead et al., 2001). In contrast to large multinational enterprises, which can simply hire or buy such resources, entrepreneurial firms must seek resources supplied by external organizations. One

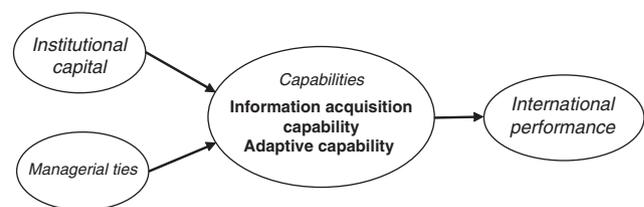


Figure 1 Research model.

option is to utilize institutional resources embedded in home-based government agencies, including participation in government programs (Arend, 2006; Czinkota, 2002; Soh, 2003; Street & Cameron, 2007). Another is to obtain resources through cooperation with partners, including suppliers, customers, and even rivals (Dhanaraj & Beamish, 2003; Peng & Luo, 2000; Ruzzier et al., 2006).

Institutional capital. Oliver (1997) combines RBV and institutional theory, arguing that institutional factors have a significant influence on a firm's selection of resources and strategies (Peng, 2003; Yamakawa et al., 2008). In particular, Oliver proposed the concept of institutional capital – that is, the firm's unique resources embedded in its institutional environment. Institutional capital can contain a variety of dimensions, including government programs (Bresser & Millonig, 2003; Gençtürk & Kotabe, 2001; Peng et al., 2009; Wilkinson & Brouthers, 2006).

The government of an emerging economy is an important institutional actor, and controls substantial resources (Li & Zhang, 2007; Peng, 2003). Therefore scholars regard government programs as a specific type of external resource because they provide entrepreneurial firms with assets and inputs, including information and financial resources such as favorable taxation conditions and export subsidies (Li & Zhang, 2007; Street & Cameron, 2007). Thus we focus on government programs as the key dimension of institutional capital.

Managerial ties. Managerial ties represent a unique type of resource because they comprise essential social relations and networks between individual managers on which to build the firm's reputation and the trust from partner organizations (Peng & Luo, 2000; Street & Cameron, 2007). Managerial ties also establish inter-firm exchange mechanisms through which entrepreneurial firms trade with and acquire resources from each other (Chetty & Agndal, 2007; Peng & Zhou, 2005). An entrepreneurial firm's internationalization is an extension of its managerial ties, primarily those in the domestic market, to other countries (Ruzzier et al., 2006). Young and smaller entrepreneurial firms in emerging economies such as China are likely to have the liabilities of foreignness (Zaheer, 1995) and newness (Zahra, 2005) in host countries. Whereas the liability of foreignness involves the disadvantage of the position of the internationalizing firm compared with the position of local

firms in host countries, the liability of newness relates to organizational constraints in terms of experience and new capability building. Therefore internationalizing firms often have to proactively acquire relational ties with foreign partners or buyers to mitigate their liabilities and mobilize network resources to create new capabilities that can contribute to their competitive advantage (Coviello & Cox, 2006). The closer the relations that an entrepreneurial firm can build with its foreign business partners, such as suppliers and customers, the more likely it is that the firm will have stable supplies, better-quality inputs or services, and orders for goods.

Hypotheses

Given the great variance between entrepreneurial firms in terms of organizational characteristics and industrial and operating environments, we focus on two capabilities that have been identified in the prior literature as fundamental to the integration and transformation of resources into competitive advantages in internationalization: information acquisition capability, and adaptive capability (Belich & Dubinsky, 1995; Dhanaraj & Beamish, 2003; Dow, 2006; Westhead et al., 2001; Yeoh, 2000).

Information acquisition capability. Information about foreign market conditions, customer needs and regulatory requirements (such as tariffs) is important for entrepreneurial firms making strategic decisions about international operations (Belich & Dubinsky, 1995; Yeoh, 2000). Scholars recognize that information acquisition is a key capability that has an impact on the firm's selection of foreign markets and as a means for entering the markets and development of products or services to satisfy foreign customers (Belich & Dubinsky, 1995; Liesch & Knight, 1999). The entrepreneurial firm's capabilities in gathering and processing information about foreign markets therefore have a positive impact on the firm's performance in international markets (Dhanaraj & Beamish, 2003).

However, it may be difficult for entrepreneurial firms from emerging economies to obtain information related to foreign markets (Belich & Dubinsky, 1995). International marketing studies demonstrate the important role of governments in the provision of information concerning foreign market conditions, trade restrictions, and overseas competition (Czinkota, 2002; Yeoh, 2000). In the context of an emerging economy, such as that of China, the role of local governments is to pursue "local state



corporatism" (Oi, 1995: 1132), which suggests that local governments provide not only the source of information and other resources but also, and more importantly, governing mechanisms to promote firm-specific capabilities in response to the challenge of market-based economy. Thus, through engaging in government export programs, entrepreneurial firms construct and build appropriate skills, routines, knowledge, and procedures in scanning and identifying useful information, thereby enhancing their information acquisition capability (Oi, 1995; Westhead et al., 2001). Hence we posit that a firm's information acquisition capability will mediate the usefulness of an entrepreneurial firm's participation in government programs and in turn the firm's international performance. Therefore:

Hypothesis 1: An entrepreneurial firm's information acquisition capability mediates the positive effect of institutional capital on its international performance.

As noted earlier, managerial ties are another important means by which entrepreneurial firms acquire the information needed for international operations, because individual executives in the firm often possess such information and share it only through interactions among individuals (Li & Ogunmokun, 2001; Luo, 2003; McAuley, 1993; Peng & Luo, 2000). Such ties offer entrepreneurs fresh and timely information directly from a known source (Borgatti & Cross, 2003; Luo, 2003). Information acquired through managerial ties is typically product- or firm-specific, which enables entrepreneurs to have a better understanding about operations and the tasks/activities required by customers and/or suppliers and therefore to be able to provide better products or services to customers (McAuley, 1993). Moreover, managerial ties result in closer interactions among executives, which enables them to learn methods, approaches, and practices related to collecting and analyzing information about product attributes, customer needs, and competitive conditions (Borgatti & Cross, 2003; McAuley, 1993; Soh, 2003). As a result, these ties should improve the firm's information acquisition capabilities, which in turn enhance the firm's international performance (Coviello & Munro, 1997; Petersen, Pedersen, & Lyles, 2008; Yli-Renko et al., 2002). Thus we hypothesize:

Hypothesis 2: An entrepreneurial firm's information acquisition capability mediates the positive

effect of managerial ties on its international performance.

Adaptive capability. A distinctive characteristic of an entrepreneurial firm is its flexibility in adapting to a rapidly changing environment (Yiu et al., 2007). Adaptive capability comes in many forms, such as putting new ideas into action, modifying existing product attributes to meet changes in customer demand, amending existing products to explore new markets, and/or upgrading products rapidly.

Adaptive capability is essential to the achievement of superior performance by internationalizing entrepreneurial firms because such firms must often tailor their products to meet the different cultural and technological standards of the markets they enter (Cavusgil, Zou & Naidu, 1993; Dow, 2006). However, transaction specificity makes entrepreneurial firms vulnerable to the uncertainties in international markets, which are typically more dynamic, fluid, and competitive than domestic markets. This vulnerability is particularly true for entrepreneurial firms in emerging economies, which have limited resources to fund reactions to such changes. Therefore, in contrast to large multinational enterprises, which may possess slack resources but are typically slow to react to economic changes, entrepreneurial firms entering international markets need to have the capability of adapting quickly (Bruton et al., 2007; Westhead et al., 2001).

Participation in government export efforts gives entrepreneurial firms access to diverse opportunities in foreign markets. For example, government programs typically include foreign trade fairs that offer a large number of entrepreneurial firms the opportunity to establish links with firms that are potential suppliers or customers overseas (Granovetter, 1995). As risk and uncertainty in international markets are greater than in domestic markets (Bouchet & Gros Lambert, 2003; Nollen, 1987), government programs do not merely help the firm capture new opportunities but also, and more importantly, make it increase its flexibility to respond quickly to unanticipated changes in an international market (Sanchez, 1995). Hence:

Hypothesis 3: An entrepreneurial firm's adaptive capability mediates the positive effect of institutional capital on its international performance.

Managerial ties allow entrepreneurial firms to better understand the demands of customers, and

to quickly identify new opportunities and act swiftly on such information (Dow, 2006; Ellis, 2000). Closer individual relations with foreign partners, such as customers and suppliers, allow the entrepreneurial firm to change product attributes more rapidly than competitors can (Bruton et al., 2007). By proactively taking on and effectively nurturing managerial ties across national borders, entrepreneurial firms are likely to become more flexible and adaptive in responding to the requests of foreign partners and the changing needs of international markets (Oviatt & McDougall, 2005). We therefore posit the following hypothesis:

Hypothesis 4: An entrepreneurial firm's adaptive capability mediates the positive effect of managerial ties on its international performance.

METHODOLOGY

Sample and Data Collection

China, as the world's largest emerging economy, is the logical choice of a research context in which to examine the internationalization of entrepreneurial firms. Limiting our investigation to a single nation helps to control extraneous potentially confounding variables such as cognitive-cultural and legal institutions. A multi-stage area sampling procedure generated a large sample of entrepreneurial firms across different regions of China. First, we selected representative provinces across the country. Six economically viable regions were suitable platforms for international businesses: four highly developed areas (Guangdong, Jiangsu, Shanghai, and Zhejiang); one medium developed area (Dalian); and one developing area (Chengdu). Of these, Guangdong and Zhejiang are leading players in China's exports, which together accounted for almost 50% of total national exports in 2006 (*China Commerce Yearbook*, 2006).

Second, from each of the six regions the researchers selected a random sample of 300 firms from two databases – the Directory of SME Exporters and the SME Industrial Directory – as both directories were available for the respective regions. We selected the firms on the basis of the following criteria:

- (1) manufacturing businesses with operations involving exports and/or other forms of cross-border activities;
- (2) businesses with fewer than 500 employees and annual sales of no more than 50 million yuan (about US\$7.3 million);

- (3) businesses founded on or after 1990; and
- (4) firms that were privately owned.

These criteria ensured that we selected relatively young and small internationalizing entrepreneurial firms. We did not include trade intermediate organizations, trading agents, or service firms, as it would have been difficult to ensure the value of the goods traded. This sampling procedure resulted in a total of 1800 firms, to which we sent questionnaires. Following various efforts, including both formal and informal contact with the selected firms, we received 775 completed questionnaires across the selected regions, representing a response rate of 43%. Such a high response rate reflects our extensive use of local *guanxi* (social capital) networks, which was necessary to solicit the participation of the Chinese managers in the survey.

Trained interviewers administered the questionnaire survey onsite to CEOs or senior executives who were in charge of exporting or other types of international business. Because of the difficulties and problems in collecting primary data from firms in China (Brouthers & Xu, 2002; Peng & Luo, 2000), Zhou et al. (2007) suggest collaboration with local researchers to gain access to local firms and obtain reliable and valid information. Thus we employed a team of trained graduate business students from a major local university in each region, except in the cities of Shanghai and Dalian, where we commissioned local research organizations to do the fieldwork. We instructed our local contacts to carry out the survey through personal interviews. We informed all respondents of the confidentiality of their responses.

To ensure data validity the researchers conducted follow-up telephone interview shortly after respondents completed the main survey; 15 respondents in each region were randomly selected from the subsample for this validation. One of the researchers asked these respondents to indicate their responses to a set of selected questions used in the questionnaire. The post-survey reports were highly consistent with the survey responses (Pearson correlation coefficients ranged from 0.82 to 0.93). These results suggest that the respondents provided valid responses in the main survey interviews. This approach seems to be practical and effective for generating more valid information, especially when Chinese senior managers are participants (Peng & Luo, 2000).



Variables and Measures

Dependent variable. Similar to previous studies (Brouthers & Xu, 2002; Woodcock, Beamish, & Makino, 1994), we used perceptual measures of *international performance*. According to Woodcock et al. (1994), it is appropriate to use perceptual measures when:

- (1) firms are either unwilling or unable to provide financial measures;
- (2) variations in accounting practices across countries hinder the reconciliation of differences; and/or
- (3) fluctuations in exchange rates and/or financial reporting differences between home and host countries exist.

Previous studies have found that perceptual measures of performance correlate well with objective measures of performance (Dess & Robinson, 1984; Geringer & Hebert, 1991). A more recent operations management study confirmed that both the reliability and the validity of perceptual measures of performance are satisfactory (Ketokivi & Schroeder, 2004).

The researchers employed five seven-point Likert-scale items (1=very dissatisfied; 7=very satisfied) to capture the perceptions of participants of the international performance of their firms. The survey asked respondents how satisfied they were with:

- (1) growth in overseas markets (growth performance);
- (2) market shares in overseas markets (market share performance);
- (3) profitability from overseas expansion (profitability performance);
- (4) return on investment through overseas sales (return on investment performance); and
- (5) increase in foreign customer satisfaction (customer satisfaction performance). These are commonly used international performance measures (Hult et al., 2008).

Independent variables. Although strategic management studies have addressed the concept of *institutional capital* (e.g., Oliver, 1997; Peng, 2003), few empirical studies have developed its measurement. Based on Oliver's (1997) concept, Bresser and Millonig (2003) propose the measurement of institutional capital on three levels: external, intra-organizational, and individual. Following their model, we examine the relationship between

internationalization and government programs, the form of institutional capital considered herein. Based upon previous studies of government promotion programs for internationalization, including those of Czinkota (2002) and Wilkinson and Brouthers (2006), and the literature on the Chinese government's policies and conditions favorable to motivate or facilitate exports (Naughton, 2007), we developed three seven-point Likert scale items to characterize the resources given by the state and local governments. We asked the CEOs or top executives to identify the extent to which their firms:

- (1) received favorable treatment from government for exports;
- (2) were helped by government to participate in international trade fairs in the local area; and
- (3) were supported by government to participate in international trade fairs across domestic regions or in overseas markets.

In decomposing *managerial ties* into relationships with (1) buyers, (2) suppliers, and (3) competitors, we used the measures of managerial ties developed by Peng and Luo (2000) and Luo (2003). Similarly, we developed three seven-point Likert scale items to capture the extent to which managers cultivated their ties with managers of other firms in terms of (1) foreign customers, (2) foreign suppliers, and (3) foreign competitors.

Mediating variables. Information about international markets and operations, specifically products and competition, is one of the most important determinants of the performance outcomes for internationalizing entrepreneurial firms (Autio, Sapienza, & Almeida, 2000; Eriksson, Johanson, Majkgard, & Sharma, 1997). Previous studies of information acquisition by exporting firms have emphasized organizational capabilities to understand customer needs, market opportunities, and business partner needs (Belich & Dubinsky, 1995; Soh, 2003; Yeoh, 2000). Based upon these studies, we developed three seven-point Likert scale items to measure firms' *information acquisition capability* in capturing and using foreign market information. We asked the CEOs or executives to indicate the extent to which their firms could acquire:

- (1) the information required to understand foreign customer needs;
- (2) the information necessary to identify overseas market opportunities; and

(3) the information needed to comply with the requirements and expectations of foreign trading partners.

Numerous studies have examined firm *adaptive capability* (Cavusgil et al., 1993; Evangelista, 1996; Oktemgil & Greenley, 1997). We based our measurement of this variable on measures by Oktemgil and Greenley (1997). We used three seven-point Likert scale items to ask respondents to indicate the extent to which their firms could:

- (1) meet a foreign customer's demand in terms of product and service specifications;
- (2) tailor products and services according to a foreign customer's request; and
- (3) respond quickly to the demand for a product price change from a foreign customer.

Control variables. We included four control variables believed to affect firm international performance. The researchers included *environmental uncertainty*, since it has been found to have a negative impact on a firm's international performance (Child, Chung, & Davies, 2003; Zhou et al., 2007). We adapted the measures of environmental uncertainty developed by Child et al. (2003) to form three seven-point Likert scale items. We asked the CEOs or executives to indicate the extent to which:

- (1) it was difficult to forecast the sales quotas of products in overseas markets;
- (2) the product exported was greatly influenced by changes in the trade policies of overseas markets; and
- (3) it was difficult to forecast the competitive advantage of their products in overseas markets.

Firm age might have an impact on firm international performance (e.g., Zhou et al., 2007). We operationalized this variable as the number of years in business. Luo and Peng (1999) found a positive association between *firm size* and international performance. We measured firm size using the natural log value of total employment. Barkema and Drogendijk (2007) believe international experience helps companies to benefit from their previous international business experiences and thus has a positive impact on international performance. We measured this variable by the number of years that a company had engaged in international activities such as exporting.

To avoid the occurrence of common method variance, we separated the measures of the predictor

and criterion variables in the questionnaire, with international performance, institutional capital, managerial ties and capability items placed far apart (Krishnan, Martin, & Noorderhaven, 2006).

ANALYSES AND RESULTS

Assessment of the Measures

Table 1 shows the descriptive statistics. The measures of both institutional capital and managerial ties were positively correlated with the measures of information acquisition, adaptive capability, and international performance, with correlation coefficients ranging from 0.07 to 0.29 for institutional capital and 0.14 to 0.40 for managerial ties.

Reliability and Validity of the Constructs

We assessed the reliability of individual items by inspecting their internal consistency values and the loadings of the items on their corresponding construct (Fornell & Larcker, 1981). The internal consistency values for all constructs were good, ranging from 0.66 to 0.89 (0.89 for international performance, 0.87 for information acquisition capability, 0.78 for adaptive capability, 0.66 for institutional capital, 0.85 for managerial ties, and 0.79 for environmental uncertainty). We then tested the validity of the constructs following the procedure recommended by Anderson and Gerbing (1988). Our six-factor confirmatory factor analysis (CFA) model fits the data well, with all indices meeting the respective criteria ($\chi^2(155)=422.98$, $p < 0.001$; NNFI=0.97; CFI=0.97; RMSEA=0.051; SRMR=0.046). Table 2 lists the CFA results, which indicate good convergent validity.

Table 3 presents the variance extracted (VE) for each construct and the square of the correlations between each construct and the others. The results support the discriminant validity of each of the constructs, as the VE of each construct was far greater than the corresponding inter-construct squared correlations (Hair, Black, Babin, Anderson, & Tatham, 2006). Therefore we concluded that each construct of our study was unique and captured phenomena that other measures did not.

Assessment of Common Method Bias

As our data were collected based upon self-reports, there existed the potential for the occurrence of common method bias (Krishnan et al., 2006). Following the recommendation of Podsakoff, MacKenzie, Lee, and Podsakoff (2003), we conducted a Harman one-factor test and found that

this model demonstrated very poor fit, as indicated by the fit indices ($\chi^2(170)=3073.00$, $p<0.001$; NNFI=0.69; CFI=0.73; RMSEA=0.18; SRMR=0.12). The researchers performed additional analysis to test for common method variance, following the procedure of Williams, Cote, and Buckley (1989). We included a single latent factor that we allowed to load on each manifest indicator. The results from this analysis indicated that while the method factor did improve our model fit ($\Delta\chi^2=137.46$, $\Delta d.f.=20$, $p<0.01$), it accounted for only a small portion of variance. Specifically, the method factor accounted for 15% of the variance, which was less than the median amount of method variance (25%) observed by Williams et al. (1989) in their review of prior research. This result further confirmed that common method bias would not be a major threat to our subsequent hypothesis testing.

Hypothesis Testing using Structural Equation Modeling (SEM)

To examine how information acquisition and adaptive capabilities might act as mediators in the relationships between resources (institutional capital and managerial ties) and the performance outcome of firm internationalization, we adopted the SEM approach outlined by Mackinnon and associates (Mackinnon, Lockwood, Hoffman, West, & Sheets, 2002). SEM is generally considered the preferred causal modeling method (James, Muliak & Brett, 2006; Schneider, Ehrhart, Mayer, Saltz, & Niles-Jolly, 2005) because researchers can use it to control for measurement error, provide information on the degree of fit of the tested model, and test multiple mediators (Brown, 1997; MacKinnon, 2000). We estimated a baseline model as the full mediation model (see Figure 1), which did not have direct paths from the two predictors (institutional capital and managerial ties) to the performance outcome. Table 4 shows that all of the fit indices indicated a good fit ($\chi^2(208)=863.32$, $p<0.001$; NNFI=0.94; CFI=0.95; RMSEA=0.064, SRMR=0.078).

Following the approach advocated by Anderson and Gerbing (1988), we tested a series of nested models against our baseline model through sequential chi-square tests with the parameter constraints of interest in this study. In Model 1 the path related to Hypothesis 1 was constrained to zero: that is, the link involving institutional capital, information acquisition capability, and international performance was removed from the baseline model. A significant change in the chi-square difference would suggest that the constrained path was

important and thus provides support for the baseline model. Similarly, we constrained the relevant paths of the three other hypothesized relationships to be zero one at a time in Models 2, 3, and 4. Table 4 shows the results of the chi-square differences between the baseline model and each of the nested models. As expected, all of the chi-square differences were significant, suggesting that the baseline model best fit our data.

Furthermore, following Kelloway (1998), we compared our baseline model with a partial mediation model in which two direct paths from institutional capital and managerial ties, respectively, to international performance were added to the baseline model. As shown in Table 4, the chi-square difference between Model 5 (partial mediation model) and our baseline model (full mediation model) was significant ($\Delta\chi^2=89.37$, $\Delta d.f.=2$, $p<0.01$). This finding suggests that adding the two direct paths (institutional capital to international performance and managerial ties to international performance) to the baseline model significantly improved the model fit. We concluded that the partial mediation model was superior to the full mediation model, and acceptable for further consideration.

To rule out alternative explanations, we tested a series of alternative models. The first such explanation is that there is no causal relationship between resources and capabilities, as capabilities are simply two forms of resources that contribute to firm international performance in the same way that institutional capital and managerial ties do. To exclude this possibility, we tested a direct effect model, Model 6, in which the four constructs (institutional capital, managerial ties, information acquisition capability, and adaptive capability) were set to directly influence international performance. The chi-square difference test suggested that the partial mediation model (Model 5) fit the data better than did the direct effect model ($\Delta\chi^2=343.92$, $\Delta d.f.=4$, $p<0.01$). The second alternative explanation concerning the relationships among variables is that, although information acquisition and adaptive capability are useful, these two capabilities actually play a trivial role in enhancing international performance. To exclude this possibility we tested a non-mediation model, Model 7, in which the paths from information acquisition and adaptive capability to international performance in Model 5 were constrained to zero. The chi-square difference test suggests that the partial mediation model (Model 5) fit the data

Table 1 Means, standard deviations and correlations

| <i>Variables</i> | <i>M</i> | <i>s.d.</i> | <i>1</i> | <i>2</i> | <i>3</i> | <i>4</i> | <i>5</i> | <i>7</i> | <i>8</i> | <i>9</i> | <i>10</i> | <i>11</i> | <i>12</i> | <i>13</i> | <i>14</i> | <i>15</i> | <i>16</i> | <i>17</i> | <i>18</i> | <i>19</i> | <i>20</i> | <i>21</i> | <i>22</i> | <i>23</i> | |
|---|----------|-------------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|--|
| 1 Growth performance in overseas markets | 4.62 | 1.33 | | | | | | | | | | | | | | | | | | | | | | | |
| 2 Market shares in overseas markets | 4.65 | 1.35 | 0.75 | | | | | | | | | | | | | | | | | | | | | | |
| 3 Profitability from overseas expansion | 4.56 | 1.41 | 0.70 | 0.75 | | | | | | | | | | | | | | | | | | | | | |
| 4 The return on investment through overseas sales | 4.49 | 1.44 | 0.57 | 0.56 | 0.67 | | | | | | | | | | | | | | | | | | | | |
| 5 An increase in foreign customer satisfaction | 5.24 | 1.28 | 0.50 | 0.54 | 0.54 | 0.47 | | | | | | | | | | | | | | | | | | | |
| 6 Information acquisition for understanding foreign customer needs | 4.56 | 1.47 | 0.21 | 0.25 | 0.24 | 0.26 | 0.21 | | | | | | | | | | | | | | | | | | |
| 7 Information acquisition for identifying overseas market opportunities | 4.56 | 1.48 | 0.22 | 0.28 | 0.25 | 0.23 | 0.19 | 0.72 | | | | | | | | | | | | | | | | | |
| 8 Information acquisition for the requirements of trading partners | 4.58 | 1.46 | 0.19 | 0.24 | 0.21 | 0.20 | 0.18 | 0.63 | 0.67 | | | | | | | | | | | | | | | | |
| 9 Adaptive to meet foreign customer demands | 5.32 | 1.21 | 0.20 | 0.24 | 0.19 | 0.18 | 0.27 | 0.39 | 0.36 | 0.39 | | | | | | | | | | | | | | | |
| 10 Adaptive to tailor products/ services according to foreign customer requests | 5.30 | 1.31 | 0.22 | 0.25 | 0.18 | 0.19 | 0.32 | 0.36 | 0.33 | 0.37 | 0.55 | | | | | | | | | | | | | | |
| 11 Adaptive to respond quickly to a change in product prices | 5.25 | 1.28 | 0.26 | 0.31 | 0.26 | 0.27 | 0.35 | 0.41 | 0.40 | 0.36 | 0.51 | 0.56 | | | | | | | | | | | | | |
| 12 Government conditions favorable for exports | 4.50 | 1.70 | 0.29 | 0.25 | 0.28 | 0.24 | 0.25 | 0.13 | 0.14 | 0.12 | 0.07 | 0.16 | 0.15 | | | | | | | | | | | | |
| 13 Government support for international trade fairs in local areas | 4.74 | 1.52 | 0.22 | 0.24 | 0.25 | 0.24 | 0.19 | 0.13 | 0.14 | 0.13 | 0.11 | 0.15 | 0.16 | 0.37 | | | | | | | | | | | |
| 14 Government support for international trade fairs across regions | 4.56 | 1.59 | 0.26 | 0.25 | 0.24 | 0.24 | 0.20 | 0.17 | 0.19 | 0.19 | 0.13 | 0.19 | 0.17 | 0.34 | 0.48 | | | | | | | | | | |
| 15 The relationship with foreign customers | 4.50 | 1.53 | 0.32 | 0.30 | 0.32 | 0.31 | 0.25 | 0.40 | 0.35 | 0.28 | 0.28 | 0.30 | 0.29 | 0.14 | 0.11 | 0.23 | | | | | | | | | |
| 16 The relationship with foreign suppliers | 4.30 | 1.60 | 0.29 | 0.32 | 0.34 | 0.34 | 0.21 | 0.39 | 0.39 | 0.33 | 0.25 | 0.26 | 0.29 | 0.22 | 0.14 | 0.21 | 0.72 | | | | | | | | |
| 17 The relationship with foreign competitors | 4.08 | 1.61 | 0.24 | 0.24 | 0.26 | 0.26 | 0.14 | 0.36 | 0.40 | 0.33 | 0.20 | 0.21 | 0.22 | 0.21 | 0.20 | 0.23 | 0.56 | 0.66 | | | | | | | |

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|----|---|------|------|-------|------|------|------|------|------|------|------|-------|------|------|------|-------|-------|------|------|------|-------|-------|-------|------|------|
| 18 | It's difficult to forecast the sales quotas of your product in overseas markets | 4.40 | 1.43 | -0.04 | 0.01 | 0.00 | 0.04 | 0.03 | 0.16 | 0.23 | 0.06 | 0.04 | 0.07 | 0.02 | 0.11 | 0.08 | -0.04 | 0.04 | 0.12 | | | | | | |
| 19 | The product exported is greatly influenced by changes in the trade policies of overseas markets | 4.69 | 1.34 | 0.11 | 0.09 | 0.06 | 0.10 | 0.06 | 0.24 | 0.29 | 0.11 | 0.15 | 0.16 | 0.13 | 0.15 | 0.12 | 0.05 | 0.06 | 0.11 | 0.49 | | | | | |
| 20 | It's difficult to forecast the competitive advantage of your product in overseas markets | 4.48 | 1.40 | -0.01 | 0.04 | 0.03 | 0.06 | 0.04 | 0.19 | 0.27 | 0.09 | 0.06 | 0.11 | 0.02 | 0.15 | 0.10 | 0.01 | 0.08 | 0.13 | 0.62 | 0.56 | | | | |
| 21 | Firm age | 8.17 | 5.29 | 0.10 | 0.06 | 0.08 | 0.06 | 0.06 | 0.04 | 0.02 | 0.00 | -0.01 | 0.05 | 0.03 | 0.09 | 0.00 | 0.06 | 0.10 | 0.15 | 0.08 | -0.07 | -0.08 | -0.06 | | |
| 22 | Ln (employment) | 4.74 | 1.12 | 0.17 | 0.18 | 0.16 | 0.10 | 0.11 | 0.07 | 0.06 | 0.02 | 0.05 | 0.15 | 0.11 | 0.12 | 0.01 | 0.07 | 0.17 | 0.19 | 0.08 | -0.11 | -0.03 | -0.08 | 0.30 | |
| 23 | International experience | 5.65 | 3.51 | 0.04 | 0.04 | 0.03 | 0.00 | 0.04 | 0.05 | 0.07 | 0.02 | -0.02 | 0.03 | 0.03 | 0.09 | -0.04 | 0.03 | 0.09 | 0.14 | 0.10 | -0.03 | -0.05 | -0.05 | 0.63 | 0.20 |

N=775. Correlations greater than or equal to 0.07 are significant at p<0.05. Correlations greater than or equal to 0.10 are significant at p<0.01.

better than did the non-mediation model ($\Delta\chi^2=5.85, \Delta d.f.=2, p<0.05$).

The third explanation is that a reverse causal relationship exists between performance and resources, as firms with better international performance can receive more government support and/or are in a better position to establish managerial ties with business partners. Model 8 treats international performance as an antecedent of institutional capital and managerial ties, which are in turn predictors of the capabilities. The overall goodness-of-fit indices ($\chi^2(217)=851.72, p<0.001$; NNFI=0.95, CFI=0.96, RMSEA=0.070, SRMR=0.09) show that this alternative model is significantly worse than our hypothesized model. More specifically, RMSEA was 0.069, which is above the suggested cutoff value of 0.60, while SRMR was 0.09, above the suggested cutoff value of 0.08 (Hu & Bentler, 1990).

The fourth possible explanation is that better information acquisition capability can help the firm better understand foreign market demands and opportunities, and therefore enables it to obtain more valuable resources from government support and foreign partners. We tested this rival explanation with Model 9, and the overall goodness-of-fit indices (RMSEA=0.071, SRMR=0.13) were unacceptable. Overall, the results suggest that the partial mediation model best fit our data.

Assessment of Hypotheses

Figure 2 depicts the parameter estimates of the partial mediation model. This is the final model, and best illustrates the results of the hypothesis testing.

Hypothesis 1 states that information acquisition capability mediates the relationship between institutional capital and international performance. As shown in Figure 2, while the hypothesized path from institutional capital to information acquisition capability was significant ($\beta=0.20, p<0.01$), the path from information acquisition capability to international performance was not significant ($\beta=0.06, p > 0.10$). Thus the results did not support Hypothesis 1.

Hypothesis 2 states that information acquisition capability mediates the relationship between managerial ties and international performance. Similar to the results for Hypothesis 1, although there was a significant relationship between managerial ties and information acquisition capability ($\beta=0.49, p<0.01$), the information acquisition capability and



Table 2 Measurement model

| Constructs | Measurement items | Factor loading | t-value | R ² value |
|---|---|----------------|---------|----------------------|
| <i>International performance</i> | | | | |
| | Growth performance in overseas markets | 0.82 | Fixed | 0.67 |
| | Market shares in overseas markets | 0.87*** | 26.79 | 0.75 |
| | Profitability from overseas expansion | 0.87*** | 26.87 | 0.76 |
| | The return on investment through overseas sales | 0.73*** | 21.05 | 0.53 |
| | An increase in foreign customer satisfaction | 0.63*** | 17.74 | 0.40 |
| <i>Information acquisition capability</i> | | | | |
| | Information acquisition for understanding foreign customer needs | 0.84 | Fixed | 0.71 |
| | Information acquisition for identifying overseas market opportunities | 0.85*** | 24.94 | 0.73 |
| | Information acquisition for the requirements of trading partners | 0.78*** | 22.74 | 0.61 |
| <i>Adaptive capability</i> | | | | |
| | Adaptive to meet foreign customer demands | 0.72 | Fixed | 0.52 |
| | Adaptive to tailor products/services according to foreign customer requests | 0.76*** | 16.63 | 0.58 |
| | Adaptive to respond quickly to a change in product prices | 0.74*** | 16.34 | 0.54 |
| <i>Institutional capital</i> | | | | |
| | Government conditions favorable for exports | 0.81 | Fixed | 0.65 |
| | Government support for international trade fairs in local areas | 0.89*** | 10.41 | 0.80 |
| | Government support for international trade fairs across regions | 0.74*** | 10.40 | 0.54 |
| <i>Managerial ties</i> | | | | |
| | The relationship with foreign customers | 0.55 | Fixed | 0.30 |
| | The relationship with foreign suppliers | 0.69*** | 23.81 | 0.46 |
| | The relationship with foreign competitors | 0.67*** | 20.46 | 0.45 |
| <i>Environment uncertainty</i> | | | | |
| | It's difficult to forecast the sales quotas of your product in overseas markets | 0.73 | Fixed | 0.53 |
| | The product exported is greatly influenced by changes in the trade policies of overseas markets | 0.70*** | 15.53 | 0.49 |
| | It's difficult to forecast the competitive advantage of your product in overseas markets | 0.80*** | 16.14 | 0.64 |

***p<0.001.

Table 3 Discriminant validity

| Constructs | International performance | Information acquisition capability | Adaptive capability | Institutional capital | Managerial ties | Environment uncertainty |
|------------------------------------|---------------------------|------------------------------------|---------------------|-----------------------|-----------------|-------------------------|
| International performance | (0.62) | | | | | |
| Information acquisition capability | 0.12 | (0.68) | | | | |
| Adaptive capability | 0.15 | 0.39 | (0.55) | | | |
| Institutional capital | 0.19 | 0.27 | 0.10 | (0.66) | | |
| Managerial ties | 0.21 | 0.08 | 0.17 | 0.14 | (0.40) | |
| Environment uncertainty | 0.01 | 0.14 | 0.04 | 0.06 | 0.02 | (0.55) |

Variances extracted are on the diagonal; square correlations are off-diagonal.

Table 4 Results of alternative model comparisons

| Model | χ^2 | df | $\Delta\chi^2$ | Δdf | NNFI | CFI | RMSEA | SRMR |
|----------------|----------|-----|---------------------------------------|-------------|------|------|-------|-------|
| Baseline Model | 863.32 | 208 | — | — | 0.94 | 0.95 | 0.064 | 0.078 |
| Model 1 | 902.66 | 210 | $\Delta\chi^2_{(b, m1)}=39.34^{**}$ | 2 | 0.93 | 0.94 | 0.065 | 0.090 |
| Model 2 | 936.93 | 210 | $\Delta\chi^2_{(b, m2)}=73.61^{**}$ | 2 | 0.93 | 0.94 | 0.068 | 0.073 |
| Model 3 | 909.63 | 210 | $\Delta\chi^2_{(b, m3)}=46.31^{**}$ | 2 | 0.93 | 0.94 | 0.065 | 0.091 |
| Model 4 | 933.54 | 210 | $\Delta\chi^2_{(b, m4)}=70.22^{**}$ | 2 | 0.93 | 0.94 | 0.068 | 0.083 |
| Model 5 | 773.95 | 206 | $\Delta\chi^2_{(b, m5)}=89.37^{**}$ | 2 | 0.94 | 0.95 | 0.059 | 0.067 |
| Model 6 | 1117.87 | 210 | $\Delta\chi^2_{(m5, m6)}=343.92^{**}$ | 4 | 0.91 | 0.93 | 0.076 | 0.140 |
| Model 7 | 779.80 | 208 | $\Delta\chi^2_{(m5, m7)}=5.85^*$ | 2 | 0.94 | 0.95 | 0.060 | 0.066 |
| Model 8 | 851.72 | 217 | | | 0.95 | 0.96 | 0.070 | 0.090 |
| Model 9 | 835.09 | 211 | | | 0.94 | 0.95 | 0.071 | 0.130 |

NNFI=Bentler non-normed fit index; CFI=comparative fit index; RMSEA=root mean square error of approximation; SRMR=standardized root mean square residual.

* $p < 0.05$; ** $p < 0.01$.

Baseline model: full mediation (no direct paths from predictors to outcome).

Model 1: the path of Hypothesis 1 was constrained to zero.

Model 2: the path of Hypothesis 2 was constrained to zero.

Model 3: the path of Hypothesis 3 was constrained to zero.

Model 4: the path of Hypothesis 4 was constrained to zero.

Model 5: partial mediation model (baseline model plus direct paths from predictors to outcome).

Model 6: direct effects model (the paths from institutional capital and managerial ties to information acquisition capability and adaptive capability were constrained to zero).

Model 7: non-mediation model: the paths from information acquisition capability and adaptive capability to international performance were constrained to zero.

Model 8: reverse causality model (international performance → institutional capital+managerial ties → information acquisition capability+adaptive capability).

Model 9: reverse causality model (information acquisition → institutional capital+managerial ties → adaptive capability → international performance).

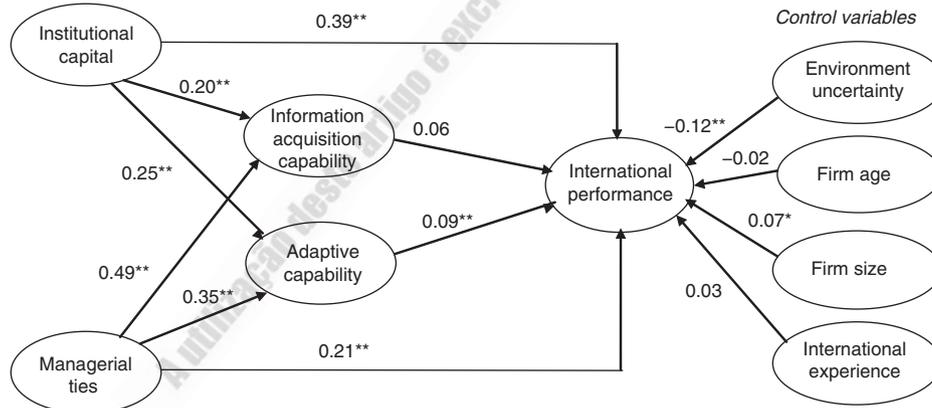


Figure 2 Final model. Parameters are standardized parameter estimates. Terms in ellipses are factor names. * $p < 0.05$, ** $p < 0.01$.

international performance link was not significant. Therefore the results did not support Hypothesis 2.

Hypothesis 3 states that adaptive capability mediates the relationship between institutional capital and international performance. As Figure 2 shows, there was a significant relationship between institutional capital and adaptive capability ($\beta = 0.25$, $p < 0.01$), and a significant relationship between adaptive capability and international performance ($\beta = 0.09$, $p < 0.01$). Therefore Hypothesis 3 was strongly supported.

Finally, Hypothesis 4 states that adaptive capability mediates the relationship between managerial ties and international performance. As shown in Figure 2, the coefficient for the path between managerial ties and adaptive capability was significant ($\beta = 0.35$, $p < 0.01$), as was the coefficient for the path between adaptive capability and international performance. Therefore Hypothesis 4 was strongly supported.

In summary, the results of our different models with and without direct paths from the predictors

to the outcome provide support for partial mediation effects. Based on the individual parameter estimates of the best-fitting model, we find support for the mediating role of adaptive capability in the relationships between the two types of resources and international performance. However, there was only limited support for the mediating role of information acquisition capability.

DISCUSSION

The present study examined the mediating influence of two firm-specific capabilities – information acquisition capability and adaptive capability – on the relationship between such resources of institutional capital and managerial ties, and international performance. Our findings revealed that adaptive capability played a partially mediating role, acting as a significant intermediate variable between resources (institutional capital and managerial ties) and international performance. These findings provide theoretical and empirical contributions to the literature.

Contributions

Overall, three specific contributions emerge from the present research. First, our study extends the RBV of the internationalization of entrepreneurial firms by recognizing the potential of institutional capital and managerial ties to enhance an entrepreneurial firm's competitive advantage in terms of shaping firm-specific information acquisition and adaptation capabilities. Hence our findings reinforce the importance of these capabilities to entrepreneurial firms, which rely on external resources such as government programs and managerial relations for their achievement of superior performance in international markets (Dhanaraj & Beamish, 2003; Westhead *et al.*, 2001; Yeoh, 2000).

Second, our evidence suggests that not all capabilities are unique or distinctive in affecting a firm's international performance. Specifically, information acquisition capability did not have a statistically significant mediating effect on the relationships between the two types of resources and international performance. This finding means that the capabilities of entrepreneurial firms to acquire information may be necessary but not sufficient in themselves for the creation of sustainable competitive advantages for successful internationalization. Our explanation is that information acquisition capability is a type of common

skill – making use of existing information resources. Although such a skill is useful to entrepreneurial firms when they are making decisions concerning foreign markets, such as entry mode and product development (Yeoh, 2000), firms are likely to function not just as mere information-processing devices (Soh, 2003). They must have the ability to deliver competitive products to satisfy foreign customers (Brouthers & Xu, 2002; Dow, 2006). Adaptive capability differs from information acquisition capability because it involves more complex routines and skills for the coordination, recombination, and integration of various existing resources, internal and external, to produce particular outputs to respond to the demands of foreign customers (Nelson, 1991; Sanchez, 1995). Thus adaptive capability is vital to creating sustainable competitive advantages, and thus leads to superior performance.

Finally, although we set this study in the context of China using a sample of internationalizing entrepreneurial firms, our conceptual model of the resource–capability–performance linkage should also apply to firms in a wide range of emerging economies in which government programs and managerial ties play significant roles in internationalization (Peng, 2001; Yamakawa *et al.*, 2008; Yiu *et al.*, 2007; Zhou *et al.*, 2007). We argue that institutional capital and managerial ties not only provide unique resources as inputs critical to entrepreneurial firms' international operations but also act as mechanisms through which managers interact with others to obtain other resources or to learn routines, skills, and procedures that help them build respective capabilities. The findings lend empirical support to the capability-building view, which asserts the importance of resource selection and the development of distinctive capabilities to enhance the productivity of other resources possessed by the firm (Amit & Schoemaker, 1993; Sirmon *et al.*, 2007; Teece *et al.*, 1997). Thus we are able to extend the theoretical foundation of both the strategic management and the international entrepreneurship literature.

Research and Practical implications

A key implication for future research is that capabilities can act as intermediate variables in the relationship between resources and performance. Previous studies have examined the direct effect of resources and capabilities on performance. We recognize that the relationships among resources, capabilities, and performance can be



complex. In particular, as we have argued, certain types of external resources, such as institutional capital and managerial ties, may become competitive advantages through the mediation of firm-specific capabilities. Future research can probe deeper into the resource–capability–performance relationship by distinguishing unique attributes of resources and capabilities and examining how capabilities transform these resources into competitive advantages. In addition, it would be worthwhile to examine whether our model based on the emerging economy of China is generalizable to other economies, including mature economies, in which government programs also play an important role in the internationalization of entrepreneurial firms (Czinkota, 2002; Ellis, 2000).

While drawing on the theoretical insights gained from the RBV (Barney, 1991) and the capability-building perspective of rent creation (Amit & Schoemaker, 1993; Ethiraj *et al.*, 2005; Teece *et al.*, 1997), the present study also reflects the notion of Sirmon *et al.* (2007) that entrepreneurs are largely opportunity driven and build capabilities in response to the opportunities that present themselves. Our model maintains their view in that internationalizing entrepreneurial firms acquire resources in place (pertaining to home-based institutional resources or foreign-based managerial ties), and then develop the capabilities to act on those resources. There is a need to further investigate the exact nature of capability development in the internationalization of entrepreneurial firms. For example, a pertinent issue is how entrepreneurial firms might respond to the dynamics of both institutional and network resources over time and act on change to create new capabilities during the course of internationalization.

From a practical standpoint, our suggestion to policymakers is that governments should help entrepreneurial firms develop distinctive capabilities to explore international markets, especially the ability to adapt products to foreign market needs. This development would require governments to organize programs such as international trade fairs and training to facilitate interactions between domestic entrepreneurial firms and foreign companies. These measures would not only help domestic entrepreneurial firms understand foreign market needs and demands but also facilitate the transmission of the complex knowledge necessary for international operations.

For managers of entrepreneurial firms that intend to internationalize, our findings suggest that they

should develop adaptive capability and flexibility to cope with dynamic international markets. The managers can achieve such flexibility by deploying productivity-enhancing resources through the use of government support and/or closer cooperation with foreign suppliers and customers.

Limitations and Future Research

This study has several limitations that future research should address. First, the majority of our sample firms came from traditional, low-technology industries. Such firms may find it easy to acquire knowledge and skills from international trade fairs and customers. For entrepreneurial firms in knowledge-intensive and high-technology industries, however, government promotion programs and managerial ties may play a different role in capability building, because these firms have to invest more in internal R&D activities (Bruton *et al.*, 2007). Second, our measurement of institutional capital included only government programs, leaving out other institutional components, such as normative and cognitive systems, which can significantly influence entrepreneurial firm capabilities and performance. Future research needs to develop a more comprehensive measurement of institutional capital. Third, we used perceptual measures of resources, capabilities, and international performance and a single respondent from each firm to depict a firm's overall international activities and performance. In future work, researchers should employ multiple performance measures, such as the growth rate of international sales and profitability. In addition, future research should examine the differences in the roles and impacts of the various capabilities related to entrepreneurial firm internationalization.

The internationalization of entrepreneurial firms in emerging economies is a significant topic that to date has received little attention. The present study helps to establish the foundation for future investigation of this topic. It is perhaps significant that a foundation has been established here for the understanding of the relationships among resources, capabilities and performance. We hope that this research will lead to further examination of this issue, which is of both theoretical and empirical importance.

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