CORPORATE SHAREHOLDINGS AND ORGANIZATIONAL AMBIDEXTERITY IN HIGH-TECH SMES: EVIDENCE FROM A TRANSITIONAL ECONOMY

ERIC GEDAJLOVIC
Departments of Innovation and Entrepreneurship and Strategy
School of Business
Simon Fraser University
Vancouver, British Columbia, Canada
Tel: 778-782-5168
Email: erg@sfu.ca

QING CAO
School of Business
University of Connecticut
Storrs, CT 06269, USA
Tel: 1-860-486-8837
Fax: 1-860-486-6415
Email: qcao@business.uconn.edu

HONGPING ZHANG
School of Management
Shandong University
Jinan, Shandong 250100, China
Tel: 86-531-88567532
Email: hpzhang@sdu.edu.cn

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ABSTRACT

As important engines for economic development in transitional nations, high-tech SMEs are confronted with numerous business opportunities, but are at the same time faced with developing institutions and a legacy of government involvement in their domestic environments. We examine the case of Chinese high-tech SMEs and develop a strategic orientation framework distinguishing between exploitation and exploration-type opportunities which accounts for the possibility that managers of such firms may attend to one, both, or neither. We find that shareholdings by top-managers promote a dual "ambidextrous" focus on both types, but that governmental share ownership leads to an orientation focusing on neither. We also find that the degree to which these firms utilize comprehensive decision-making processes partially mediates these main effects. Implications regarding the entrepreneurial performance of firms and economies in transitional contexts are discussed.

Key Words: Chinese SMEs, Opportunity Identification and Evaluation, Corporate Ownership, Decision Comprehensiveness, Organizational Ambidexterity.

1. **Introduction**

To meet the complex challenges presented by globalization and technological change, managers must adopt an entrepreneurial mindset and emphasize both exploration and exploitation type-opportunities (Hitt et al., 2001; Shane and Venkataraman, 2000). This is especially true for small- to medium-sized enterprises (SMEs) in transitional and high growth economies, such as China, as their managers are confronted with, and must select from numerous business opportunities. Of these, exploration-type opportunities involve pursuing business opportunities that are radically new to the firm, whereas exploitation-type opportunities involve the pursuit of opportunities to refine and sustain competitive advantages in areas in which the firm currently operates (March, 1991). Researchers generally agree that pursuing an ambidextrous orientation, that is, the ability to attend to both exploration and exploitation-type opportunities is highly desirable as it helps dynamically balance the short and long-term needs of the company (O'Reilly and Tushman, 2007). At the same time, such an "ambidextrous" orientation is also difficult to achieve because exploratory and exploitative opportunities often compete for the same scarce resources and place somewhat conflicting demands on organizational processes (March, 1991).

As such, managers must make strategic choices regarding the relative emphasis they place on these competing organizational processes. Managers may emphasize one type of opportunity over the other, choose to orient the firm in pursuit of both types, or fail to develop a strategic orientation that attends to either type of opportunity. In this paper, we explore both the antecedents of such strategic orientations as well as the intra-organizational mediating processes that account for some of the antecedents' effects. In particular, we utilize reasoning grounded in agency theory to identify the contrasting effects of top-manager and governmental share ownership on executives' strategic orientation with respect to exploration and exploitation. In addition, we explicate the link between decision comprehensiveness – the extent to which decision makers consider multiple

alternatives and evaluation criteria (Forbes, 2007) – and the strategic orientation adopted by executives, suggesting that managers' level of commitment to such processes is dependent (in contrasting ways) upon the ownership stakes of management and government. In doing so, we theorize that comprehensive decision-making processes are particularly important to firms operating in opportunity-rich environments as they tend to promote a dual emphasis on exploitation and exploration opportunities.

We contextualize our study in high-tech SMEs in China, and in so doing, extend the literature on corporate entrepreneurship to a setting that has both practical and theoretical importance. According to China Statistics Bureau, SMEs not only account for about 99% of the total number of firms in China, but also contribute about 60% of that nation's total gross industrial output in 2010. Given China's rapid development and average annual GDP growth of approximately 10% over the past twenty years, its SMEs are presented with a deep and broad set of business opportunities related to technological development, market enhancement, and internationalization (Li, 1998). However, despite its rapid growth, China's economy is still transitioning from government-led to more market-based economic development and remains lacking in some supporting financial infrastructure pertaining to public and private equity markets (Peng and Zhou, 2005). As a consequence, though their opportunity-rich environment provides the managers of Chinese SMEs with considerable latitude in charting the strategic orientation of their firms, they are also subject to the constraining effects of under-developed institutions and government involvement. As such, these firms represent an excellent setting to investigate how senior managers attend to, and select between alternative business opportunities.

This study also makes several other contributions to the literature. First, our research utilizes theory (cf. Raisch and Birkinshaw, 2008) and measurement instruments (He and Wong, 2004) from the organizational ambidexterity literature to distinguish between different types of

opportunities. In this respect, theory (Kirzner, 1973; Shane and Venkataraman, 2000; Stevenson and Jarillo, 1990) and measurement instruments (Brown, Davidsson and Wiklund, 2001; Covin and Slevin, 1989; Lumpkin and Dess, 1996) pertaining to corporate entrepreneurship have not previously distinguished long-term exploration-type opportunities from shorter-term exploitation types. We reason that this gap is material because decisions regarding which opportunities to act upon necessitates complex trade-offs between the short and long-term needs of a company (Gupta, Smith and Shalley, 2006), and such trade-offs become even more complex in transitional economies because of the role played by government officials in promoting and circumscribing opportunities. In addressing this gap, we respond to Zahra's (1993) concern that extant ways of operationalizing firm-level entrepreneurship may not be sufficiently comprehensive.

Second, few studies have examined factors influencing top-management's level of support for different types of opportunities. We reason that the absence of research examining the effects of corporate ownership represents a missed opportunity to better understand processes related to entrepreneurial opportunities because there is a large body of theory and evidence regarding the effects of share ownership on the incentives and discretion of managers (Alchian and Demstez, 1972; Zahra, 1996). To explore this gap, we utilize agency theory to distinguish between the contrasting effects of managerial and government ownership on top-management's level of support and engagement with short-term exploitation, and long-term exploration opportunities. Our study thus contributes to the limited literatures on managerial commitment to opportunities (cf. Zahra, Neubaum and Huse, 2000). A transitional economy such as China's is well suited for exploring the influence of alternative ownership arrangements on managerial commitment to opportunities, because while executive share ownership of high-tech SMEs is now widespread, factors such as the need to address voids in private-sector financial infrastructure make government involvement in the ownership and financing of SMEs quite common (Lu, 2005; Zhao, 2003).

Third, prior research on the identification and evaluation of opportunities has focused a great deal on the cognitive and experiential characteristics of individuals (Ardichvili, Cardoz and Ray, 2003; Baron, 1998; Ciavarella et al., 2004) and, to a lesser extent, on institutional-level determinants (e.g. Baker, Gedajlovic and Lubatkin, 2005; Sarason, Dean and Dillard, 2006). However, with few exceptions (e.g. Chesbrough, 2000; Dimov and Gedajlovic, 2010), there is a paucity of *organizational*-level research examining the role of organizational processes in determining how entrepreneurial opportunities are identified and evaluated. This represents an important gap because opportunity identification and evaluation are often the products of team or multi-person efforts (Ruef, Aldrich and Carter, 2003) rather than the work of a single actor acting without organizational support or constraint (Baker and Nelson, 2005). We begin to address this gap by examining the influence of decision-making processes on opportunity identification and evaluation. In doing so, our study helps move research on entrepreneurial opportunities beyond the single-person, single-insight characterization that currently dominates it (Dimov, 2007).

2. Theoretical Background

2.1. Strategic Orientation and Opportunities for Exploration and Exploitation

The dynamism of their high-tech business environment along with the rapid growth of their home market provides Chinese high-tech SMEs with abundant opportunities for development of products, markets, and competencies. Such an environment also confronts top-managers with strong and ongoing competitive pressures to effectively identify, evaluate and pursue an appropriate set of opportunities (Li, 1998). In this respect, a firm's strategic orientation reflects its top-managers' decisions and approach towards the identification and evaluation of various opportunities (Slater, Olsen and Holt, 2006). It drives the firm's choices regarding which of these many opportunities to pursue and consequently has an impact on a wide range of performance

outcomes. Increasingly, management researchers have explicitly or implicitly used March's (1991) notions of exploration and exploitation as the basis for their conceptualization of a firm's strategic orientation (Floyd and Lane, 2000). As depicted in Figure 1, a firm's strategic orientation can emphasize exploration or exploitation-type opportunities, both, or neither.

Insert Figure 1 about here

Some firms have a predominant exploratory focus (Quadrant III) and actively seek radical change and opportunities in new technologies, products, or markets. Exploration oriented firms actively collect new knowledge (Schulz, 2001) and expand aggressively through product development (Eisenhardt and Schoonhoven, 1990) strategies. As a consequence, these firms often excel at the creation of new competencies and are adaptive to environmental changes (Gupta et al., 2006). However, they also often encounter difficulties in appropriating value from their innovations due to a lack of efficiency in the processes necessary to successfully commercialize and capture returns (Levinthal and March, 1993).

Other firms have a predominant exploitative orientation (Quadrant II). These firms possess highly refined routines that leverage clearly identified core strengths and focus on efficiency driven rents (Gupta et al., 2006). In general, firms emphasizing exploitation opportunities excel at combining and recombining elements of existing knowledge (Schulz, 2001) to produce products that have near-term commercial value in existing markets (Rothaermel and Deeds, 2004). While the processes and goals of these firms are attuned to contemporaneous market conditions, they often face difficulties in environments requiring the adoption of new technologies or processes rather than the improvement of existing ones (Tushman, Newman and Romanelli, 1986).

A third strategic orientation utilized by some firms is a dual one emphasizing both exploration and exploitation-type opportunities (Quadrant I). Researchers have termed such a dual

orientation “ambidextrous” and see it as a sort of dynamic capability that is highly advantageous for firms that are able to develop it (O’Reilly and Tushman, 2007). Such a dual orientation facilitates the dynamic balancing of short and long-term needs, and firms that achieve it are attuned to the importance of opportunities to improve the operational efficiency and incremental innovation on the one hand and more radical forms of innovation and organizational renewal on the other (Cao, Gedajlovic and Zhang, 2009). However, relatively few firms are able to achieve it because exploration and exploitation opportunities place competing demands on top-management and rely on very different organizational processes (Simsek et al., 2009). For instance, while the identification and evaluation of exploratory opportunities requires divergent thinking and implies bottom-up learning processes to increase variance, an ability to effectively identify and evaluate exploitation opportunities involves convergent thinking and top-down processes that reduce variance (Lubatkin et al., 2006).

Some firms, however, never develop a clear strategic orientation with respect to either exploration or exploitation-type opportunities (Quadrant IV). In this regard, Cohen, March and Olsen (1972) describe types of firms that fail to connect problems and opportunities for their resolution because of unclear preferences and fluid input by decision makers. Similarly, Mintzberg and McHugh (1985) find that some politicized organizations function as “adhocracies” characterized by the absence of planning and limited structure and procedures. Firms such as these tend to “muddle through” (Braybrooke and Lindblom, 1970), lacking a clear strategic orientation.

In summary, as portrayed in Figure 1, top-managers may develop distinctive types of strategic orientations with respect to the identification and pursuit of business opportunities. Below, we examine how these orientations are formed within Chinese high-tech SMEs where the identification and evaluation of alternative business opportunities is an especially critical task.

2.2. Managerial Shareholdings and Strategic Orientation

Historically, the Chinese economy has been dominated by large-scale state-owned-enterprises (SOEs) (Peng and Heath, 1996). However, as part of the economic reform process, policies have been put into place over the past two decades to encourage the creation of private-sector firms in industrial and geographic areas of strategic priority for the state (Peng and Zhou, 2005). As a result, many small-medium sized high technology businesses have emerged in special economic zones and the vast majority of these are owned and operated by independent entrepreneurs (Boisot and Child, 1996). Based upon agency theory, suggesting that such ownership provides top-managers with both the incentives and discretion to manage their firms effectively (Eisenhardt, 1989), we theorize that the owner-managers of these SMEs will develop distinct orientations with respect to the identification and evaluation of potential opportunities.

With respect to incentives, a central theme in the agency theory literature is that share ownership incentivizes managers because it means that they will bear and benefit from the financial impact of their strategic decisions (Alchian and Demsetz, 1972). With respect to discretion, share ownership represents an important base of power (Finkelstein, 1992) that augments a senior manager's already strong influence on important corporate decisions (Hambrick and Mason, 1984) such as those related to the relative importance placed on short versus long-term goals as well as strategic choices regarding which opportunities are pursued and which are forgone. According to the "management entrenchment" thesis, such a power base also helps managers resist the efforts of other parties to influence the strategic direction of the firm (Chrisman, Chu and Sharma, 2005). Thus, share ownership augments the ability of top-managers to set a strategic agenda and also to resist the efforts of other interested parties who may wish to influence or re-direct it.

One important consequence of the incentives created by share ownership is that it results in management having a direct financial interest in closely monitoring their firm's operations and in

taking the necessary steps to ensure that costs are contained, production is efficient, and resources are put to their most efficient use (Carney, 2005). Further, given their broad discretion over company activities, share-owning top-managers are also in a strong position to monitor operations and take swift corrective action to address inefficiencies (Gedajlovic, Lubatkin and Schulze, 2004). Given these considerations, we reason that share ownership provides top-managers with both the incentives and discretion necessary to attend to opportunities that refine and improve existing capabilities with respect to current products and markets - opportunities which March (1991) describes as quintessentially exploitative.

Hypothesis 1a. *Top-management shareholdings are positively related to a firm's orientation towards exploitation opportunities.*

While some researchers contend that significant shareholdings by owner-managers result in managerial risk aversion (e.g. Chandler, 1990; Morck, Strangeland and Yeung, 2000), we reason that the effect of such ownership among the high-tech SMEs studied here will be the opposite and that managerial ownership will actually be associated with an orientation towards long-term (and riskier) exploration-type opportunities. In this respect, we note that researchers positing a link between managerial ownership and risk averse strategic behavior have generally based their arguments on the case of second (and subsequent) generation family firms in which the less entrepreneurial and managerially capable descendants of founders are in control (e.g. Morck et al., 2000; Perez-Gonzalez, 2006). In contrast, given the relative youth of high-tech SMEs in China (Zhang, Li, and Schoonhoven, 2009), it is unlikely that they will be adversely affected by ineffective and risk-averse management by their founders' heirs. On the contrary, we expect that such founder-led firms will be positively oriented towards organizational growth and exploration

opportunities (Miller, Le Breton-Miller and Scholnick, 2008). We believe this to be the case for two related reasons.

First, emanating from the work of Simon (1945) and Penrose (1959), there is significant evidence suggesting that managers left to their own devices will strongly favor growth strategies which expand the corporate mission because they provide them with personal benefits of power and prestige (Demsetz and Lehn, 1985). In this regard, top-managers (and especially founders) with significant equity stakes not only have broad discretion, but often see the firm as very much an extension of themselves (Carney, 2005) and in this light, exploration opportunities can provide the basis for both corporate and personal growth (Miller and Le Breton-Miller, 2005).

Second, we reason that because top-managers with large shareholdings are well entrenched and difficult to replace (Morck, Shleifer and Vishny, 1990), they will have a strong incentive to invest in activities and projects that have good upside potential for long-term payoffs. We theorize this to be the case since well entrenched managers can expect to be in their positions long enough to guide such projects to fruition and also benefit from the results of these long-term investments in their capacities as shareholders. Conversely, top-managers without significant shareholdings are less well-entrenched, and consequently have less discretion and incentive to view long-term exploration-type opportunities favorably. In this regard, Wright et al. (2000) find that management buy-outs promote entrepreneurial growth and organizational renewal as management's increased ownership stakes provide them with the incentives and discretion to develop an "entrepreneurial mindset" and utilize "entrepreneurial heuristics" as the basis for important strategic decisions. In sum, our discussion suggests that top-management shareholdings are positively related to an organization's orientation towards more radical innovation, experimentation, and other corporate development opportunities, activities March (1991) describes as characteristically exploratory.

Hypothesis 1b. *Top-management shareholdings are positively related to a firm's orientation towards exploration opportunities.*

2.3. Governmental Shareholdings and Strategic Orientation

Though Chinese governmental agencies rarely hold majority ownership in high-tech SMEs, they do still commonly take minority equity stakes in them because these firms often lack alternative forms of financial capital due to the underdeveloped state of China's private equity institutions, regulatory hurdles as well as a significant shortage of skilled professional investors (Batjargal and Liu, 2004; Hussain, Millman, and Matlay, 2006). Though the governmental officials overseeing these minority ownership stakes rarely participate in firm strategy-making and daily operations, they do closely monitor them as the performance and conduct of the firms they oversee is factored into assessments of their political achievements and materially influences their status within their community and the public service (Lu, 2005; Zhao, 2003). While these equity stakes are typically quite small, and government officials rarely directly intervene in the management of these firms, their influence on a firm's prospects for success in its various ventures can be quite substantial. Peng and Luo (2000) liken these officials to "mother-in-laws" who,

> *"…absolutely have to be pleased. If you fail to do that, you may be forced to close your factory without knowing what's wrong at all... On the other hand, if these "in-laws" are happy, they can make life a lot easier for you. Sometimes they make you think they have the magic touch to make anything happen. For example, they can procure cheaper materials for you, provide priority access to infrastructure, and promote your products in state- controlled distribution channels."* (Peng and Luo, 2000; 495)

More generally, governmental officials have in their capacities as market regulators and taxation authorities a variety of fiscal and policy devices to either assist or sanction the firms in

which they invest (Guthrie, 2005; Ma, Yao and Xi, 2006). Thus, even at quite low levels, governmental shareholdings can be highly influential on the strategic orientation and decision processes of firms (Boardman and Vining, 1989; Jones et al., 1999).

As a consequence, top executives of firms with governmental shareholdings face strong pressures to perform certain functions and conform to established expectations of the government (Zahra, Ireland, Gutierrez, and Hitt, 2000). As firm performance is considered in appraisals of the political effectiveness of the investing government agencies, officials from these agencies may pressure SME executives to maintain satisfactory performance by controlling costs and improving existing products and markets. As such, governmental shareholdings can motivate executives to optimize existing advantages. In this respect, Tan (2002) and Peng, Tan, and Tong (2004) find that Chinese firms with partial government ownership respond to environmental conditions differently from other firms and resemble Miles and Snow's (1978) *defender*-type as they focus on existing customer and product mixes and established markets (Peng, 2000) – activities suggestive of an orientation towards exploitation-type opportunities.

Hypothesis 2a. *Governmental shareholdings are positively related to a firm's orientation towards exploitation opportunities.*

Governmental shareholdings in SMEs represent a stable block of shares because they are seldom traded and thus have been theorized to be a factor that dampens capital market pressures on managers (Boycko, Shleifer and Vishny, 1996). However, the effect of such dampening of market pressures on a firm's orientation towards opportunities is an open question in the literature. On this point, some have argued that governments hold strategic equity stakes in private enterprises with

the expectation that they will pursue a broader set of exploration-type opportunities than market constraints would normally allow (Amsden, 1989; Eckel and Vining, 1985).

On the other hand, the agency perspective adopted here suggests that governmental shareholdings in Chinese SMEs will dampen their incentives to explore new business areas as these firms can expect continued regulatory and commercial support from government officials (Guthrie, 2005; Nolan, 2001) provided they conduct business within the scope of their original missions and deliver agreed upon performance targets. That is, as it is inherently risky, and also fundamentally alters the range of activities in which an SME is engaged, the pursuit of exploration-type opportunities may endanger continued support by government officials, if performance targets are not met, or the SMEs enter new areas of business that were not previously approved. Thus, we reason that governmental shareholdings in high-tech SMEs will increase the perceived downside risks associated with exploratory opportunities.

More subtly, we expect that governmental shareholdings in high-tech SMEs will also attenuate the perceived benefits that may be derived from exploratory opportunities. In this regard, we reason that the expectation of continued financial and regulatory support from governmental shareholders (Peng and Luo, 2000) will diminish the perceived threat to existing operations from environmental shocks and changing market conditions. Under such conditions of diminished perceived environmental uncertainty, managerial incentives to pursue exploratory opportunities will be attenuated because the expected costs of failing to adapt as well as the option value or expected benefit from experimentation or the development of new technologies or markets are relatively modest when the risk of environmental instability is low (McGrath, 1997).

Thus, because governmental shareholdings may both increase the downside risk and attenuate the potential upside benefits associated with the pursuit of exploratory business

opportunities, we reason that it will also decrease the likelihood that the executives of Chinese high-tech SME will develop and utilize an exploratory orientation.

Hypothesis 2b. *Governmental shareholdings are negatively related to a firm's orientation towards exploration opportunities.*

2.4. Decision Comprehensiveness and Strategic Orientation

In this section, we examine the effects of corporate ownership on a firm's comprehensive decision-making processes and theorize that such processes partially mediate the relationship between top-management / governmental shareholdings and an SME's strategic orientation. We theorize such a causal chain because the incentive effects of share ownership are partially reflected in the degree of managerial commitment to high quality decision-making processes. We focus on decision comprehensiveness, a construct which captures the extent to which top-managers consider many alternative opportunities and also apply multiple criteria to their evaluation (Forbes, 2007; Fredrickson and Mitchell, 1984). As such, it assesses the degree of commitment and rigor executives apply to the identification and evaluation of business opportunities. As we discuss below, such commitment and rigor in decision-making is highly relevant to high-tech Chinese SMEs due to the opportunity rich environments in which they operate (Bureau of SMEs, 2010), as well as the influence of government officials on their chosen opportunities (Peng and Zhou, 2005).

2.4.1 The Effects of Managerial and Government Ownership on Decision Comprehensiveness

Some research suggests that executive shareholdings can result in managerial entrenchment (Morck, Shleifer and Vishny, 1988) and cause complacency among executive decision makers. Yet we theorize from an agency perspective that due to the possible financial benefits managerial share

ownership more likely has the effect of incentivizing managers (Alchian and Demsetz, 1972) to engage in comprehensive decision-making. In support of this view, a body of research in the finance and management literatures has linked share ownership by executives to a strong sense of identification with their companies, resulting in them being highly engaged and committed to sound management practice and the promotion of their company's reputation (Miller et al., 2008; Sirmon and Hitt, 2003). Given the potential value to the company of comprehensive decision-making (Atuahene-Gima and Li, 2004) and the incentive (Alchian and Demsetz, 1972) and commitment (Anderson and Reeb, 2003) effects of top-management share ownership, we hypothesize that:

Hypothesis 3a. *Top-management shareholdings are positively related to decision comprehensiveness.*

Conversely, we expect that governmental shareholdings attenuate the incentives of managers to engage in comprehensive decision-making processes. In this respect, we theorize that since government officials have many means to come to the aid of firms in which they invest (Peng and Luo, 2000) and can buffer the firm and its management from the consequences of ineffective decision-making (Yiu, Bruton and Lu, 2005), costs to top-managers of not engaging in thorough and high-quality decision-making processes is quite low. More generally, having government equity creates the perception that a firm is supported by the government; this has substantial symbolic value in China because political and regulatory conditions represent the most influential, unpredictable, and complex aspects of its business environment (Tan and Litschert, 1994). We theorize that such a perception lessens the perceived benefits of engaging in comprehensive decision-making processes. We consequently hypothesize that,

Hypothesis 3b. *Governmental shareholdings are negatively related to decision comprehensiveness.*

2.4.2 The Mediating Effects of Decision Comprehensiveness

The above arguments lay the foundation for our final two hypotheses in which we theorize that the effects of top-management and governmental shareholdings are not only evident in their direct effects on exploitative and exploratory orientations (H1a/1b and H2a/2b), but are also felt indirectly, through their more subtle and complex influences on decision comprehensiveness. Since comprehensive decision-making processes entail the collection and use of substantial information from both inside and outside the firm (Forbes, 2007; Fredrickson, 1984), we reason that they result in a deepening of top-managers' understanding of their firm's resources and competitive standing. Consequently, we theorize that top-managers engaged in comprehensive decision-making are more likely to develop a consummate understanding of where organizational competencies lie and of subtleties in the relationship between their resources and performance. As a result, managers engaged in more comprehensive decision-making processes are more likely to identify and favorably evaluate exploitation-type opportunities that refine and optimize existing operations. Moreover, as information collected for a particular decision can often be applied to a variety of issues for which it was not originally collected, over time, comprehensive decision-making processes can produce a deep pool of information (Simons, Pelled and Smith, 1999), leading to the identification of additional exploitation opportunities. Given our earlier discussion of the effects of managerial/governmental shareholdings on decision comprehensiveness (cf. H3a/3b), we posit that:

Hypothesis 4a. *Decision comprehensiveness partially mediates the relationships between top-management/governmental shareholdings and a firm's orientation towards exploitation opportunities.*

Since decision comprehensiveness involves the collection and consideration of much new information from outside the firm (Fredrickson, 1984), it supports the absorption and application of new external knowledge and activities linked to the stimulation of competency-building ideas for the firm (Cohen and Levinthal, 1990). More generally, we also expect that engaging in comprehensive decision-making broadens top-management's field of vision regarding external developments and organizational competencies. As such, the enhanced breadth of information resulting from comprehensive decision-making can help managers identify opportunities beyond what would be apparent to them given their pre-existing mental models and can prevent what Janis (1982) terms "groupthink"—group decision-making characterized by uncritical acceptance or conformity to prevailing points of view. As a consequence, we reason that the breath of information and different perspectives produced by comprehensive decision-making will increase the likelihood that a firm is orientated towards experimentation and the discovery of novel market opportunities - traits that are characteristically exploratory. Given our earlier discussion of the effects of top-management and governmental shareholdings on decision comprehensiveness (i.e., H3a/3b), we hypothesize that:

Hypothesis 4b. *Decision comprehensiveness partially mediates the relationships between top-management/governmental shareholdings and a firm's orientation towards exploration opportunities.*

3. Method

3.1 Sample and Data Collection

Our sample is drawn from three high-tech parks located in three different economic zones in China—Shandong (Eastern coastal zone), Guangdong (Southern zone), and Sichuan (Mid-West zone). We randomly selected a total of 200 firms out of the total population of these parks (i.e. 100 out of approximately 160 firms in Shandong, and 50 from about 80 firms in both Guangdong and Sichuan parks). Local research assistants, who worked in the administrative offices of these industrial parks, delivered in mid-2006 two separate questionnaires in sealed envelopes to the Chief Executive Officers (CEOs) and the Chief Technology Officers (CTOs) of the firms. We explained the purpose of the research in a cover letter and requested their participation. We also provided separate envelopes to the executives for them to return their completed surveys. Reminder phone calls and visits were made to encourage participation.

We developed the questionnaires after conducting interviews with five CEOs from Chinese high-tech SMEs in order to get their insights regarding our theoretical model and the clarity and appropriateness of questions asked on our surveys. The questionnaires were originally designed in English as the key measures used in this study are operationalized using already established instruments published in that language. We used the back-translation method to ensure the validity of the translation (cf. Brislin, 1980). We pre-tested the resulting Chinese versions of the questionnaires on the group of CEOs we interviewed and made further refinements.

The final sample consists of 122 firms, from which we received completed and usable questionnaires from both the CEO and CTO. Thus, the overall response rate was, 122/200, or 61%. Among the 122 firms in the final sample, 74 are from the technology park located in Shandong (74% response rate), 25 from Guangdong (50% response rate) and 23 from Sichuan (46% response rate). These firms average 118 employees in size, US $1.5 million in sales, and 6.2 years in age.

They operate in a variety of high-tech industries, including biotech (3.3%), computer software (14.8%), automation (13.9%), electronics (23%), telecom (16.4%), environmental technologies (2.5%), specialty chemicals (4.1%), test measurements (4.9%), advanced materials (7.4%), semiconductors (4.1%), and medical equipment (3.3%). Following Kanuk and Berenson (1975), we recorded the order of responses to the survey based on the time it took each executive to respond and correlated the response order with firm age (r=.223, p=.161) and size (r=.021, p=.723). The non-significant difference between early and late respondents indicates the risk of response bias is very low (Combs and Ketchen, 1999).

Following Podsakoff et al. (2003) and in line with the recommendations of Chang et al. (2010), we obtained data for our independent and dependent variables from two different sources in order to mitigate the potential problem of common method variance. Specifically, we collected data on a firm's corporate ownership and decision-making processes from the CEO. Additionally, in line with Rothaermel and Alexandre (2009: 765) who found that the CTO was "the person best positioned" to respond to questions pertaining to exploration and exploitation, we used the executive occupying that position to provide the data used for the calculation of those scales. In our sample, the average CEO respondent is 40.4 years old, with 4.5 years of tenure in their position, 7.0 years in their firm, and 11.6 years in their industry. The average CTO is 37.7 years old, with 3.7 years of tenure in their position, 5.5 years in their firm, and 10.1 years in their industry. Thus, on average, both CEOs and CTOs have multi-year firm and industry experience on which to base their answers to the questionnaires.

3.2 Measurement

We measured top-management and governmental shareholdings as the percentage of shares owned by a firm's CEO and by local, regional and national governments and /or their agencies

respectively. Following prior research on organizational ambidexterity, we treat exploitation and exploration as distinct orientations with respect to opportunity identification and evaluation and operationalize them on the basis of survey data provided by senior company executives (Rothaermel and Alexandre, 2009). In particular, we utilize He and Wong's (2004) exploitation and exploration scales and asked company CTOs to rate (on a 1-7 scale) the extent to which eight different statements are true regarding product development in their firm over the past three years (or since its founding if the firm was less than three years old). Four of the statements pertain to exploitation (the improvement of existing product quality, improvement of product flexibility, reduction of production cost, and enhancement of existing markets) and four other statements pertain to exploration-type opportunities (the introduction of new generations of products, extension of product range, opening up new markets, and entering new technological fields). Following He and Wong (2004), we use the average of each set of four ratings to measure a firm's orientation with respect to exploitative and exploratory-type opportunities.

To assess the convergent and discriminant validity of the exploitation and exploration measures, we performed an exploratory factor analysis on all eight items. With a principal axis factor analysis (oblique rotation), the scales loaded cleanly on the two expected factors with loadings all above .5. Cronbach's alpha for exploitation is .79 and for exploration is .82, suggesting good convergent validity and reliability. Following Fornell and Larker (1981), we calculated the average variance extracted (AVE) for exploitation (AVE=.53) and exploration (AVE=.66). The square roots of both AVE values (.81 for exploitation and .73 for exploration) are much higher than the correlation between the two latent variables (r=.347) providing further confidence regarding their discriminant validity.

To measure decision comprehensiveness, we employed Atuahene-Gima and Li`s (2004) scale which was developed for use on China-based technology ventures. Following Atuahene-Gima

and Li, we take an average of these 5 items. The Cronbach's alpha for this measure is .82. To assess inter-rater reliability, we asked the CTOs to answer the same questions and found their ratings to be significantly correlated with that of the CEO in their firm (r=.622, p<.001).

We employed confirmatory factor analysis (CFA) to examine the validity of the exploration, exploitation, and decision comprehensiveness scales. The fit indices showed that the measurement model fit the data reasonably well (χ^2=70.281, p<.05; CFI=.973; IFI=.974; RMSEA=.058; SRMR=.065) and all the items in the three scales have highly significant standardized loadings which suggests good convergent validity. Following Bagozzi et al. (1991), we further assessed the discriminant validity of these constructs via a series of CFAs to test whether for each pair of constructs; a two-factor model fit the data better than a one-factor model. The chi-square difference tests for all the related constructs in pairs demonstrated that, in each case, the chi-square in the constrained model (correlation fixed as 1) was significantly greater than the chi-square for the unconstrained model (correlation estimated freely).

We also include several commonly used control variables in our empirical models. A number of firm-specific controls were obtained from the CEO survey. As younger firms are often conceived to focus more on building new competencies, whereas older firms tend to focus more on maintaining existing advantages (Gilbert, 2005), we control for *firm age* (years since inception). Because larger firms and firms with better past performance typically possess more slack resources to support exploitative and exploratory activities (Jansen, van den Bosch and Volberda, 2006), we control for *firm size* (natural log of the number of employees) and *past performance* (growth rate over past three years). To account for possible path dependencies in a firm`s innovation-related activities, we control for *past R&D intensity* through the ratio of R&D investment to sales in the past year. Additionally, because of their unique investment objectives and the potential for them to become engaged in the major decisions of the companies in which they invest (Gompers and Lerner, 1999),

we control for the percentage of a company's shares held by venture capital firms. We also control for top-management *team size* and *functional diversity* (Blau index) due to their known influence on decision-making processes (Simons et al., 1999).

Further, to account for possible differences in the business environments of firms, we control for environmental instability, institutional support, and geographical differences. Following Dess and Beard (1984), *environmental instability* is measured as the standard deviation of the sales growth of firms in an industry. We control for *institutional support* through a scale containing questions pertaining to support received from administrative agencies which was developed by Li and Atuahene-Gima (2001) and which we administered to company CEOs (Cronbach's alpha = .79). We also use two indicator variables to account for possible local park-specific effects on the hypothesized relationships and treat the park in Sichuan as the default category.

4. Results

Table 1 reports descriptive statistics and correlations of all hypothesized and control variables. Of note, we find that, on average, top-managers own 29.78%, and governments and their agencies control 11.42% of the shares of the firms in the sample. We used ordinary least square (OLS) regression analysis to evaluate the hypotheses. Table 2 reports these results. The highest variance inflation factor value is 2.646, well below the recommended ceiling of 10 (Kleinbaum, Kupper and Muller, 1988), suggesting that our estimates are unlikely to be biased by multicollinearity problems.

Insert Tables 1 and 2 about here

H1a/b and H2a/b pertain to the direct relationships between top-management/governmental shareholdings and strategic orientation. H1a predicts that top-management shareholdings are

positively related to an exploitative orientation and our results show strong support for this hypothesis (β=.288, p<.001, in Model 2). Similarly, in accord with H1b, we find that top-management shareholdings are positively related to an exploratory orientation (β=.162, p<.05, in Model 5). Together, these results indicate that shareholdings by top-managers influence their strategic orientation, and in particular, are associated with a dual emphasis on exploitation and exploration opportunities. With regard to the influence of governmental shareholdings, H2a posits that they have a positive effect on exploitative orientation, but our results indicate that the effect is actually negative and significant (β=-.202, p<.05, in Model 2). H2b predicts a negative relationship between governmental shareholdings and exploration and this hypothesis is strongly supported (β=-.246, p<.01, in Model 5). Together, these findings indicate that governmental shareholdings have the effect of attenuating the extent to which top-managers attend to *both* exploitation and exploratory opportunities.

Our findings provide support for the hypotheses pertaining to the effects of top-management and governmental shareholdings on decision comprehensiveness. H3a posits that managerial shareholdings are positively related to decision comprehensiveness and this hypothesis is strongly supported (β=.226, p<.01, in Model 8). H3b theorizes a negative relationship between governmental shareholdings and decision comprehensiveness, and we do find a negative (but marginally significant) relationship between these variables (β=-.154, p<.1, in Model 8).

To evaluate H4a and H4b, which posit that decision comprehensiveness partially mediates the effects of top-management and governmental shareholdings on exploitation and exploration orientations, we follow the procedure developed by Baron and Kenny (1986) and refined by Mathieu and Taylor (2006). Thus, support for H4a and 4b requires that each of four tests be met, a set of results that we do in fact observe. Test 1 is met because managerial and governmental shareholdings each have significant effects on exploitation and exploration (cf. H1a/b, H2a/b). Test 2

is also met as both hypothesized relationships between share ownership and decision comprehensiveness are observed (cf. H3a, H3b). We also observe a significant effect of decision comprehensiveness on exploitation (β=.271, $p<.01$) and exploration (β=.280, $p<.01$) in models containing managerial / governmental shareholdings variables (Models 3 and 6). Thus, the third test is also met. Finally, to assess whether the fourth test is met, we compared the significance levels of each top-management/governmental shareholdings– exploitation/exploration relationship before and after the entry of decision comprehensiveness. H4a posits that decision comprehensiveness partially mediates the effects of top-management / governmental share ownership on exploitative orientation. Based on a p-level comparison between Models 2 and 3, we find that the effects of both managerial and governmental shareholdings on exploitation decrease, but maintain their significance when decision comprehensiveness is entered into the model, results that support a finding of partial mediation (Baron and Kenny, 1986). H4b posits that decision comprehensiveness mediates the effects of managerial /governmental shareholdings on exploration. As with the results on exploitative orientation, we find that both the effects of managerial and governmental shareholdings on exploration decrease, but maintain their significance when decision comprehensiveness is entered into the models estimated (based on a p-level comparison between Model 5 and Model 6), and such results indicate that decision comprehensiveness partially mediates these relationships as well.

Taken together, our results provide general support for our proposed research hypotheses except for the finding pertaining to the effects of governmental shareholdings on exploitation (H2a)

4.1 Post hoc Analyses

To further examine the relationship between share ownership, decision comprehensiveness, and strategic orientation we performed some additional ANOVA based analyses. In one set of tests, we used the median cut-off to divide the sample into "high" and "low" decision comprehensiveness

groups, and found significant differences between them in terms of their mean levels of managerial and governmental share ownership. In particular, we found that the mean level of top-management share ownership in the "high" group (mean=34.03%) was greater than that of the "low" decision comprehensiveness group (mean=26.04%) ($F=3.430$, $p<.1$). In contrast, the mean level of governmental share ownership in the "high" group (mean=7.98%) was less than that of the "low" decision comprehensiveness group (mean=14.43%) ($F=3.064$, $p<.1$), results that are consistent with the regression findings reported above.

In another series of tests, we used median cut-offs on the exploitation and exploration scales to categorize firms into four groups corresponding to the quadrants of Figure 1. This approach categorized 35 firms as having an ambidextrous orientation (Quadrant I), 39 firms with an exploitative orientation (Quadrant II), 15 firms with an exploratory orientation (Quadrant III), and 33 firms lacking a clear orientation (Quadrant IV). Subsequent ANOVA tests indicated that compared with the "lacking clear orientation" group (Quadrant IV), the "ambidextrous" group (Quadrant I) is characterized by greater top-management shareholdings ($F=2.878$, $p<.1$), less governmental shareholdings ($F=3.794$, $p<.05$), and higher levels of decision comprehensiveness ($F=6.678$, $p<.05$), findings that corroborate the regression based results reported in Table 2.

5. Discussion

In economies around the world, high-tech SMEs are viewed as "hidden champions" (Simon, 2009), who generate substantial growth and new employment for their host nations. These sorts of firms have already played an important role in the transition of the Chinese economy from one largely reliant on state-run organizations, to one based on private sector firms (Bureau of SMEs, 2010). Looking forward, they will likely play an increasingly pivotal role in China (and other transitional economies) as their business and government leaders strive to convert their nation's

competitive advantage from one that relies upon cheap labor and government-directed heavy industry to one based upon indigenous entrepreneurship and innovative capacity (Carney and Gedajlovic, 2000).

Our study examines the differential effects of managerial and governmental share ownership on the decision-making processes and strategic orientation of such firms; and in doing so, it sheds light on both the challenges and opportunities they face. While Chinese high-tech SMEs are presented with a broad and deep opportunity set due to the dynamism of their industrial setting as well as the rapid development of their domestic environment, their capacity to effectively pursue these opportunities is hampered by deficient supporting market and financial institutions and a legacy of government involvement in the private sector of the same home environment. Under these conditions, the strategic orientation and decision-making processes utilized by SME executives play a vital role in determining the types of business opportunities that will be identified and pursued. In this study, we have theorized (and found) that managerial and governmental share ownership are important factors that differentially influence these firms' strategic orientation with respect to business opportunities (Figure 1), as well as the antecedent decision-making processes that partially determine that orientation.

To do so, we have connected the agency theory literature on the incentive effects of ownership (cf. Alchian and Demsetz, 1972) with research on opportunity identification and evaluation (cf. Shane and Venkataraman, 2000). In doing so, we address several ambiguities in the agency literature regarding the implications of share ownership on managerial incentives. For instance, in contrast to the managerial entrenchment thesis, which suggests that high levels of managerial share ownership can lead to complacency, risk aversion, and general poor quality decision-making (cf. Morck et al., 1990), we find that it is actually associated with a high level of

commitment to effort-intensive decision comprehensiveness as well as an ambidextrous strategic orientation which balance a firm's short and long-term risks and needs (Cao et al. 2009).

Similarly, we provide evidence on competing views in the literature regarding the effects of government shareholdings on a corporation's mission and the range of activities in which it is engaged. On the one hand, there are those who believe that by dampening market forces and by pressuring firms to invest in activities that serve policy objectives, government shareholdings provide the impetus for the pursuit of new and diverse business activities (Amsden, 1989; Eckel and Vining, 1985). On the other hand, reasoning based upon agency theory suggests that government shareholdings may actually lead to the pursuit of fewer mission expanding opportunities, because such shareholdings attenuate both the upside potential rewards to executives from pursuing such activities as well the perceived downside risks from doing so. Our results indicating a negative relationship between government shareholdings and the adoption by executives of exploitative and/ or explorative strategic orientations supports the latter view. These findings suggest that while government share ownership in private sector SMEs may have the effect of insulating a firm from market pressures to focus their activities (Boycko et al., 1996), it also appears to have implications regarding managerial incentives and decision-making quality (Table 2; Models 2, 5, 8), which result in a net negative effect on the likelihood that executives will perceive and act upon both exploitative and explorative opportunities.

Further, our findings suggest that by providing effective incentives, managerial shareholding among Chinese high-tech SMEs promote an ambidextrous strategic orientation. In this respect, previously identified antecedents to organizational ambidexterity, such as top-management team behavioral integration (Lubatkin et al., 2006), paradoxical cognition (Smith and Tushman, 2005), and the interaction of stretch, discipline, support, and trust in organizational context (Gibson and Birkinshaw, 2004), are quite socially complex and causally ambiguous, which

makes them difficult to develop and replicate. Our findings suggest that affording top-managers ownership stakes may accomplish similar outcomes insofar as such ownership appears to promote high quality decision-making that takes into account both the short and long-term needs of a company. On this point, we note that agency theorists have long argued that the coupling of ownership and control provides strong incentives for cost containment (Alchian and Demstez, 1972; Jensen and Meckling, 1976), but have largely ignored the effects of managerial share ownership on revenue enhancement. By linking managerial ownership to the pursuit of both exploitative and explorative opportunities, our results suggest that such ownership may impact not only incentives for cost containments, but may also lead to outcomes associated with the creation of new revenue streams through a variety of processes such as the application of the sort of entrepreneurial cognitive heuristics described by Wright et al. (2000), as well as through the enhancement of existing revenue streams through the identification and engagement in complimentary peripheral activities (Day and Schoemaker, 2004) .

More generally, with this study we have bridged the literatures on opportunity identification and evaluation in the entrepreneurship field with research on ambidexterity from the organizational theory literature. Given the robustness and growth of research in both these fields, as well as their common foci, we believe that there are many potentially fruitful opportunities to advance our understanding of innovation and new business creation through the cross-fertilization of ideas from the two areas. With this study, we have taken advantage of one such opportunity, by taking the theoretical (March, 1991) and operational distinction (He and Wong, 2004) between exploitative and explorative innovation from the ambidexterity literature, to enrich the conceptualization and operationalization of the "opportunity" construct that is central to the field of entrepreneurship. In this respect, we note that extant theoretical and operational treatments of the widely used entrepreneurial orientation construct treat opportunity identification as central to the construct (e.g.

Covin and Slevin, 1989; Lumpkin and Dess, 1996), but do not distinguish between the various types of opportunities that may be pursued. To address this gap, we developed and applied a strategic orientation framework (Figure 1) which highlights that the identification and evaluation of opportunities in SMEs can be understood as a strategic process involving the management of complex tradeoffs and potential synergies between exploitation and exploration-type opportunities.

5.1. Limitations and Future Research

Our study has a few limitations which point to issues requiring future research. First, the cross-sectional design of the study did not allow us to examine how corporate executives dynamically manage the stock and flow of opportunities within their organizations. In this respect, future studies can use longitudinal data to further our understanding of the antecedents of opportunity-related processes as well as the performance outcomes resulting from realized portfolios of the various types of opportunities accumulated.

Second, in focusing on the influence of share ownership, we have only scratched the surface of the possible effects of managerial incentive- and discretion-related antecedents on the range and types of opportunities an organization may pursue. In this respect, since the successful pursuit of entrepreneurial opportunities requires that top-managers be provided with the correct blend of incentives and discretion (Wright et. al., 2000), future research may be usefully directed towards a consideration of other variables such as family ownership, executive compensation practices, and board of director composition, which the governance literature suggests are other important determinants of managerial incentives and discretion (Finkelstein, 1992).

Third, in focusing on organization-level antecedents, this study addresses calls to move research on opportunity identification and evaluation beyond the single-person, single-insight characterization that currently dominates it (Dimov, 2007). On the other hand, its consideration of

the organization-level determinants of opportunity identification and evaluation in SMEs is certainly incomplete. In this respect, we focused on share ownership and decision-comprehensiveness variables, but our study did not examine many other possible organization-level antecedents of opportunity identification and evaluation. Underscoring this limitation are our regression results indicating that the links between top-management and governmental share ownership and strategic orientation are only *partially* mediated by decision comprehensiveness; a set of findings that directs attention to the need for additional research examining the roles played by other decision-making (and other) process variables such as decision speed (Judge and Miller, 1991), rationality (Hough and White, 2003), and commitment (Dooley and Fryxell, 1999) as direct and indirect determinants of opportunity identification and evaluation in SMEs.

Fourth, while our focus on high-tech SMEs operating in China is an important strength of the study, we also acknowledge that care must be taken in extrapolating our findings to dissimilar institutional contexts. In this regard, we believe that our theoretical arguments are generally applicable to other emerging economies as these countries share similar transitional challenges with China with regard to the support of high-tech SMEs in their private sectors. Nevertheless, we note that even among transitional economies, China has unique historical and social characteristics and we consequently recommend that future research examine organization-level entrepreneurial processes such as those explored here in diverse and comparative settings with theory and methods attuned to the specific context(s) being investigated.

6. Conclusions

Along with the theoretical issues described above, our findings have some important practical implications. In this respect, our results suggest that the widespread practice in many transitional nations of having governmental entities acquiring equity stakes in private sector SMEs

is a double-edge sword. On one hand, such equity investments provide SMEs with financial capital in the absence of a well-developed indigenous financial system. On the other hand, our findings suggest that such equity infusions are not without costs since governmental shareholdings decrease the likelihood that SMEs will utilize comprehensive decision-making processes or develop a clear strategic orientation with respect to the identification and evaluation of business opportunities. These findings suggest that direct government equity infusions to support high-tech entrepreneurship in transitional economies may not be effective public policy and that public resources may be more usefully directed elsewhere such as to programs that develop and improve the efficiency of indigenous private equity and banking systems.

In contrast to the effect of government equity, our findings point to the effectiveness of managerial share ownership in promoting decision comprehensiveness and strategic ambidexterity; this suggests that the benefits of providing ownership incentives to managers is not restricted to advanced and market-based economies, and can in fact be quite beneficial in contexts characterized by weak supporting financial and market infrastructure and substantial government involvement in market and regulatory processes. Thus, on the basis of the evidence reported here, entrepreneurs in transitional economies should exercise considerable caution with respect to equity infusions from government agencies.

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Figure 1: Strategic Orientation with Respect to Type of Opportunities

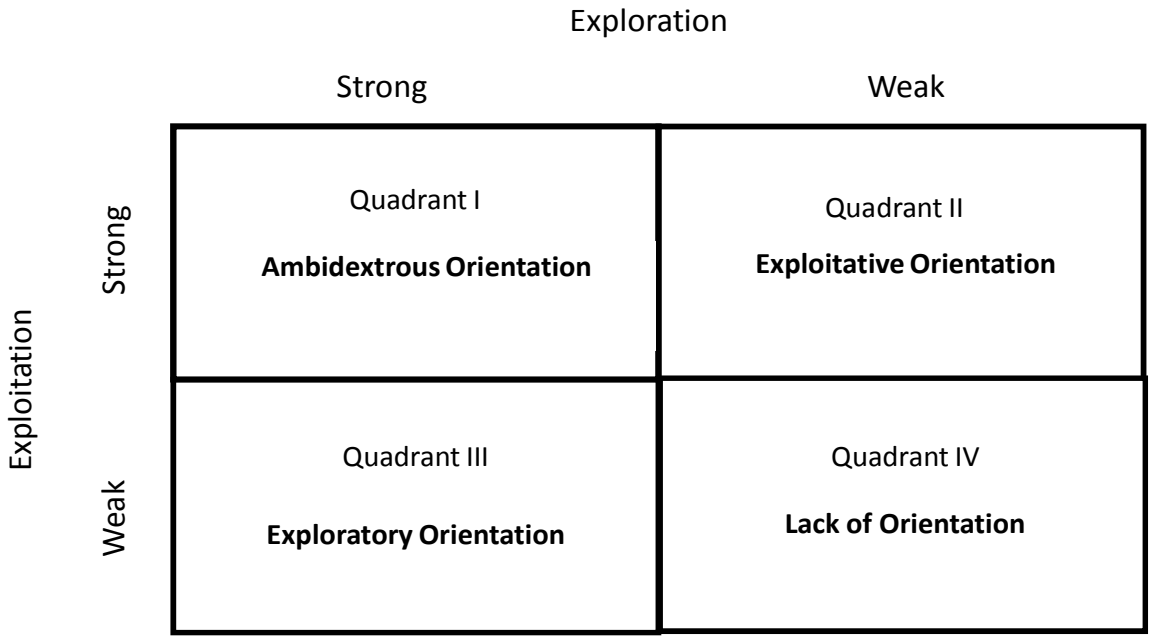

Table 1: Descriptive Statistics and Zero-order Correlations

		Mean	s.d.	1	2	3	4	5	6	7
1	Top mgmt share own.	29.78	24.03							
2	Government share own.	11.42	20.46	-.110						
3	Exploitation	5.55	1.09	.262**	-.162†					
4	Exploration	5.37	1.08	.155†	-.165†	.470***				
5	Dec. comprehensiveness	5.38	.91	.241**	-.095	.190*	.310***			
6	Firm age	6.19	4.41	-.143	-.059	-.081	-.095	-.155†		
7	Firm size	4.30	1.11	-.220*	.256**	-.020	-.026	-.141	.598***	
8	Firm past performance	35.45	38.38	.078	-.053	.263**	-.006	.054	-.282**	-.124
9	Firm past R&D intensity	25.69	18.70	.100	-.035	-.076	.123	-.096	-.300***	-.283**
10	VC share ownership	7.86	12.50	-.295***	.186*	.069	.027	-.093	-.112	.187*
11	TMT size	4.76	1.76	.024	-.021	.159†	.119	-.104	.322***	.482***
12	TMT func. diversity	.73	.09	-.181*	.071	.053	.088	-.042	.233**	.341***
13	Environ. instability	49.92	21.45	-.006	.048	.100	.056	.123	-.151†	-.209*
14	Institutional support	3.49	1.42	.010	.109	.167†	-.112	.218*	.156†	.235**

		8	9	10	11	12	13
9	Firm past R&D intensity	.003					
10	VC share ownership	.109	-.029				
11	TMT size	-.029	-.222*	.034			
12	TMT func. diversity	-.051	-.335***	.037	.662***		
14	Environ. instability	.152†	.143	.066	-.204*	-.233**	
15	Institutional support	-.122	-.076	.085	.212*	.180*	-.041

† p<.1; * p<.05; **p<.01; ***p<.001

Table 2: Test of Hypotheses

	Exploitation			Exploration			Decision Comprehensiveness	
	1	2	3	4	5	6	7	8
Controls:								
Firm age	-.114	-.153†	-.040	-.165†	-.234*	-.123	-.212*	-.241*
Firm size	.006	.163	.126	.034	.191†	.157	-.019	.101
Firm past performance	.146†	.103†	.110†	-.030	-.068	-.072	.025	-.007
Firm past R&D intensity	-.101	-.094	-.048	.117	.123†	.170*	-.194*	-.189*
VC share ownership	.015	.114	.131†	-.031	.037	.052	-.158*	-.080
TMT size	.260*	.101	.086	.102	-.025	-.00	-.111	-.235*
TMT func. Diversity	-.104	.031	.049	.037	.135	.154	-.018	.087
Environ. Instability	.028	.071	.045	.073	.116	.076	.112	.146†
Institutional support	-.162*	-.180*	-.249**	.139†	.133†	.058	.287***	.273*
Park dummy-Shandong	.030	-.045	-.073	.124	.040	.009	.057	.000
Park dummy-Guangdong	-.135	-.200*	-.237*	-.110	-.187†	-.225*	-..066	-.115
Share Ownership:								
Top mgmt share own.		.288***	.249**		.162*	.122†		.226**
Government share own.		-.202*	-.189*		-.246**	-.234**		-.154†
Decision Processes:								
Dec. comprehensiveness			.271**			.280**		
R^2	.158	.250	.316	.121	.185	.245	.172	.229
d.f.	11, 110	13, 108	14, 107	11, 110	13, 108	14, 107	11, 110	13, 108
F	1.881*	2.769***	3.525***	1.374	1.883*	2.474**	2.083*	2.462**
Change in R^2		.092	.066		.064	.060		.056
d.f.		2, 108	1, 107		2, 108	1, 107		2, 108
F(Change in R^2)		6.601**	10.263**		4.233*	8.466**		3.936*

Standardized coefficients reported

† p<.1; * p<.05; **p<.01; ***p<.001, one-tail test