



## Entrepreneurial strategy making and performance in China's new technology ventures – the contingency effect of environments and firm competences

Haiyang Li <sup>a,\*</sup>, Yan Zhang <sup>a,1</sup>, Tsang-Sing Chan <sup>b,2</sup>

<sup>a</sup>*Jesse H. Jones Graduate School of Management, Rice University, Houston, TX 77005, United States*

<sup>b</sup>*Department of Marketing and International Business, Lingnan University, Tuen Mun, Hong Kong*

Available online 2 August 2005

### Abstract

In this study we examine the contingency value of entrepreneurial strategy making with a sample of technology-based new ventures in China's emerging economy. Our results show that the relationship between entrepreneurial strategy making and performance is moderated by both environmental factors and firm competences. Specifically, entrepreneurial strategy making has a positive relationship with performance when the environment is highly uncertain and when the firm has strong marketing competences.

© 2005 Elsevier Inc. All rights reserved.

*Keywords:* New technology ventures; Entrepreneurial strategy making; Environment and firm competences

### 1. Introduction

It is widely recognized that today's managers face an environment characterized by rapid technological changes and customer demand changes. To cope with such challenges, both academic scholars and the popular press have suggested that entrepreneurial strategy making will be critical for

\* Corresponding author. Tel.: +1 713 348 4194; fax: +1 713 348 6331.

*E-mail addresses:* [haiyang@rice.edu](mailto:haiyang@rice.edu) (H. Li), [yanzh@rice.edu](mailto:yanzh@rice.edu) (Y. Zhang), [chants@ln.edu.hk](mailto:chants@ln.edu.hk) (T.-S. Chan).

<sup>1</sup> Tel.: +1 713 348 2462; fax: +1 713 348 6296.

<sup>2</sup> Tel.: +852 2616 8230; fax: +852 2616 8239.

organizational success (Business Week, 2002; Covin & Slevin, 1989; Dess, Lumpkin, & Covin, 1997). Entrepreneurial strategy making, also referred to as entrepreneurial orientation (Lumpkin & Dess, 1996) or entrepreneurial posture (Covin & Slevin, 1989), is an extension of the concept of entrepreneurship from the individual level to the organizational level (Lee, Lee, & Pennings, 2001). It reflects the extent to which a firm is committed to risk-taking, innovation, and proactiveness in developing and implementing its strategies (Miller, 1983).

Despite its appealing nature, the extant literature has consistently revealed that the proposed positive relationship between entrepreneurial strategy making and performance does not exist (Covin & Slevin, 1989; Dess et al., 1997) or at best is very weak (Lee et al., 2001). Instead, scholars have found that this relationship is contingent on contextual variables including environmental hostility (Covin & Slevin, 1989), firm performance (Covin & Slevin, 1991), and competitive strategies (Dess et al., 1997). To extend this line of research, in this study we draw upon the contingency theory (Burns & Stalker, 1961; Lawrence & Lorsch, 1967; Venkatraman & Prescott, 1990) and test the contingency value of entrepreneurial strategy making by examining both external environments (i.e., environmental uncertainty and industry growth) and internal firm competences (i.e., technology and marketing competences) as contingency variables. This represents a response to the call by Lumpkin and Dess (1996) which suggests to examine both environmental and organizational factors as contextual variables in studying the performance implication of entrepreneurial strategy making. Our key argument is that, as entrepreneurial strategy making reflects a firm's risk-taking, innovation, and proactiveness (Miller, 1983), its value on firm performance should depend on the extent to which external environments provide potential opportunities for the firm to explore via this type of strategy making, as well as the extent to which internal competences enable the firm to capture opportunities when implementing this type of strategy making.

In addition, previous studies in this area are mainly limited to firms operating in Western developed markets. There is a paucity of research of the contingency value of entrepreneurial strategy making in other institutional settings. In this study, we will examine this issue in the context of new technology ventures in China, the largest and the fastest growing emerging economy in the world. Emerging economies refer to "low-income, rapid-growth countries using economic liberalization as their primary engine of growth" (Hoskisson, Eden, Lau, & Wright, 2000: 249). China's emerging economy involves significant institutional transitions and is characterized with highly uncertain and dynamic markets. Reforms in the direction of liberalization and marketization in China introduce fundamental and comprehensive changes to "the formal and informal rules of the game that affect organizations as players" (Peng, 2003: 275), which encourage entrepreneurial behavior. For example, during China's economic transition, over 20,000 technology-based new ventures have been founded across the nation in the past 15 years. Although it can be argued that the establishment of new ventures itself is entrepreneurial, new ventures differ in their levels of entrepreneurial strategy making (Lee et al., 2001). More important, how new ventures can benefit from entrepreneurial strategy making is an important yet unexplored issue. Compared with established firms in China, new ventures have little heritage from the traditional planning system. Instead, they were founded after China's economic transition started about two decades ago. In addition, these ventures are relatively more vulnerable to environmental conditions and they tend to have relatively limited resources including both marketing and technological competences (Li & Atuahene-Gima, 2001; Stinchcombe, 1965). Also, it has been argued that the complex and regulatory nature of China's transition environment is characterized with discouraging future-oriented and risk-related decisions (Luo & Park, 2001; Tan & Litschert, 1994). Therefore,

technology-based new ventures provide a unique context to test the contingency value of entrepreneurial strategy making in China's emerging economy.

The remainder of this paper is organized as follows. First, after reviewing the literature on the relationship between entrepreneurial strategy making and firm performance, we develop our theory and research hypotheses. Then, we describe the method used to test these hypotheses. Finally, we present the results of the study and discuss their implications.

## 2. Theoretical background and research hypotheses

### 2.1. Entrepreneurial strategy making and firm performance

Strategy making is an organization-level process that encompasses the range of activities firms engage in to formulate and enact their strategic missions and goals. These activities include analysis, planning, decision making, and strategy implementation (Hart, 1992). Prior studies have suggested that there are different types of strategy making postures or modes. For example, Miller (1983) identified three strategy making postures including rationality, interaction, and assertiveness. Hart (1992) proposed an integrative framework of strategy making processes that includes five distinctive modes of strategy making: command, symbolic, rational, transactive, and generative.

For a long time, entrepreneurial strategy making has been explicitly or inexplicitly subsumed by other strategy making postures (e.g., Bourgeois & Brodwin, 1984; Hart, 1992). One exception is Mintzberg's (1973) study which suggests that entrepreneurial mode (referring to opportunity seeking, risk-taking, and decisive action catalyzed by a strong leader) is an independent strategy making posture. More recently, Dess et al. (1997) empirically demonstrate that entrepreneurial strategy making is an independent posture for strategy making that an organization may exhibit. Entrepreneurial strategy making captures the organizational processes, methods, and styles of firms to develop and implement their strategic decisions. It is consistent with "the type of organization-wide entrepreneurial strategy making processes described in previous research" (Dess et al., 1997: 677). For example, Miller and Friesen (1978) posited that entrepreneurial firms are adaptive and innovative. Miles and Snow (1978) suggested that prospectors are risk-taking.

Miller (1983: 771) has defined an entrepreneurial firm as one that "engages in product market innovation, undertakes somewhat risky ventures, and is *first* to come up with proactive innovations, beating competitors to the punch" (italic is original). Thus, conceptually, there are three components of entrepreneurial strategy making: innovativeness, risk-taking propensity, and proactiveness. These components have been validated and widely used in the literature (Covin & Slevin, 1989; Lee et al., 2001; Lumpkin & Dess, 1996). Specifically, the component of innovativeness taps a firm's propensity to engage in novelty, experimentation, and R&D activities that may result in new products or technological processes (Lumpkin & Dess, 1996). Through innovations, firms differentiate themselves from others and achieve competitive advantages. The component of risk-taking propensity refers to "the degree to which managers are willing to make large and risky resource commitments – i.e., those which have a reasonable chance of costly failures" (Miller & Friesen, 1978: 923). Entrepreneurial firms tend to conduct risk-taking behaviors (e.g., making large resource commitments) in the interest of obtaining high returns by seizing opportunities in the marketplace (Lumpkin & Dess, 1996). The component of proactiveness refers to a firm's propensity

of anticipating and acting on future needs by seeking new opportunities (Lumpkin & Dess, 1996; Miller & Friesen, 1978). Proactiveness is a crucial organizational process because it entails a forward-looking perspective.

Entrepreneurial strategy making has been argued to be positively related to firm performance because it can help firms to gain from first-mover advantages and capitalize on emerging opportunities (Covin & Slevin, 1991; Zahra & Covin, 1995). For example, Zahra and Covin (1995) argue that firms with entrepreneurial strategy making can target premium market segments, charge high prices and skim the market ahead of their competitors. These firms monitor market changes and respond quickly, thus taking advantage of emerging opportunities. Lee et al. (2001: 617) even claim that entrepreneurial posture can be regarded as an organizational resource that provides sustainable competitive advantages because it is embedded in organizational routines, is intangible, and is dispersed among organization members.

Despite its appealing nature, researchers have questioned the effectiveness of entrepreneurial strategy making across different conditions. For example, Covin and Slevin (1989) did not find a significant direct relationship between entrepreneurial strategy making and performance of small firms. Instead, they found that entrepreneurial strategy making can lead to higher financial performance in hostile environments. They argued that entrepreneurial strategy making in hostile environments can help the firm to gain or maintain competitive advantages aggressively. In another study, Dess et al. (1997) investigated how the impact of entrepreneurial strategy making on firm performance is contingent on competitive strategies and found some evidence that cost leadership and entrepreneurial strategy making interact to have a positive impact on the overall company performance. In brief, the extant literature indicates that the impact of entrepreneurial strategy making on performance is not direct but contingent. It is suggested that an essential key to understanding the effectiveness of entrepreneurial strategy making is “to analyze the context in which it occurs” (Dess et al., 1997: 691). This suggestion is consistent with the contingency theory. This theory posits that the congruence or fit among key variables, such as environment, resources, and strategy, is critical for obtaining optimal performance (Burns & Stalker, 1961; Venkatraman & Prescott, 1990). In this study, we will examine both external environments and internal firm competences as the contingency variables within the context of China’s new technology ventures.

## *2.2. Entrepreneurial strategy making in China’s new technology ventures*

China started its economic transition since its economic reform in 1979. Before economic reform, China’s economy is governed by a centrally planning system in which market competition was absent, industries are protected, and strategizing is not necessary. Since its economic reform, China’s economy is transitioning from a centrally planned system to a market oriented system. China’s economic transition brings tremendous opportunities for firms. According to Nee (1989: 666–667), with the emergence of market in China, administrative redistributors lose power and firms have increasing discretion over the terms of exchange of their goods and services. More importantly, markets provide powerful incentives for firms because these firms can retain a great share of the surplus through market transactions. Reforms in the direction of marketization result in the change of opportunity structures centered on the marketplace, thus giving rise to entrepreneurship. Consequently, the market-oriented economic transition has greatly stimulated industry growth and created opportunities attractive not only for Chinese domestic firms but also for foreign multinational corporations.

However, economic transition is a process and it takes a long time to be completed. When the traditional planning system has been substantially weakened while the new market system has not been well developed, the market environments become complex and uncertain (Luo & Park, 2001). For example, Shenkar (1990) argued that the environments in China are characterized with ambiguous property rights, incomplete transmission of information, and uncertain and inconsistent government policies. Also, given poorly developed financial markets and weak institutions for distribution of capital, capital has generally low availability and high cost in China (Li & Atuahene-Gima, 2002).

For new technology ventures, entrepreneurial strategy making tends to offer innovative products and compete by being a first market entrant and by experimenting with emerging trends and technologies. It helps the ventures monitor market changes and respond quickly in order to take advantage of emerging opportunities. However, entrepreneurial strategy making also bears high costs and risks to respond effectively to institutional and economic changes in the Chinese markets. When the market environments become more uncertain and complex, new technology ventures may become hesitant to commit heavy resources to conducting product innovations or initiating highly risky R&D projects. Also, entrepreneurial strategy making involves risk-taking and getting into new product markets, which would result in a high level of managerial inefficiency by underutilizing or misutilizing physical, financial, and human resources (Luo & Park, 2001). Note that new technology ventures have resource limitations (Stinchcombe, 1965). Thus, entrepreneurial strategy making may be unnecessarily costly and risky for these ventures in China.

Given the costs and benefits of entrepreneurial strategy making, its value for firm performance in China's emerging economy depends on whether the ventures can perceive opportunities in the environments and whether they are able to capture the perceived opportunities based on their resources and capabilities. In the following sessions, we will examine how external environments and internal firm competences in China's emerging economy can moderate the relationship between entrepreneurial strategy making and firm performance and develop our research hypotheses.

### *2.3. The moderating role of external environments*

Environmental factors as important contingency variables have been widely acknowledged in the literature. New ventures manage to mitigate the effects of external forces in order to maintain or enhance their performance. They collect information on external environments and interpret the information prior to making strategic decisions. Prescott (1986) examined the role of environments as moderators of the relationship between strategy and performance. He suggested that the strategy variables were chosen as predictors because the field of strategic management focuses on managerial choices within environmental contexts. In examining strategy making in small firms, Covin and Slevin (1989), for example, found that entrepreneurial strategy making has a differential impact on firm performance in hostile versus benign environments. In this study, we examine two important dimensions of environments in China's emerging economy: environmental uncertainty and industry growth.

Environmental uncertainty refers to the degree of change and unpredictability of a market environment (Miller, 1983). In uncertain environments, which change rapidly, managers have great difficulties in getting access to the information they need, and they have difficulties in understanding, believing, and acting upon information collected. It could be argued that in highly uncertain environments, an entrepreneurial attitude may lead to firms achieving a very poor performance. The opposite may also be true. In highly uncertain environments, bases for competitive advantage, industry



structure, and product performance standards are generally short lived or in a constant state of flux. Thus, new ventures can achieve product market superiority through competitive aggressiveness which distances the ventures from their industry rivals (Dess et al., 1997). Indeed, McGrath and MacMillan (2000: 1) claim that uncertainty can be used to a firm's benefit if the firm creates and employs an entrepreneurial mindset as the case of new ventures in this study. Empirically, Khandwalla (1987) found that firms competing in dynamic environments can successfully cope with uncertain conditions through risk-taking, innovative behavior, and proactive strategies.

The environments faced by Chinese new ventures become dynamic and uncertain through China's economic transition. With market-oriented reform, market power and competition play an increasingly important role in the whole economic system. This requires new ventures to learn quickly and be aggressive in market competition. Also, through economic reform, customer needs and preferences become more sophisticated and unpredictable. In such environments, passive or nonaggressive behaviors often lead to deteriorating performance because bases for competitive advantage and product performance standards are in a constant state of flux (Karagozoglu & Brown, 1988). Instead, new ventures need to be aggressive and risk-taking to achieve their competitive advantages in the sophisticated and unpredictable environments. Thus, we propose that,

**Hypothesis 1.** Environmental uncertainty will moderate the relationship between entrepreneurial strategy making and firm performance in China: In a highly uncertain environment, new ventures with a stronger emphasis on entrepreneurial strategy making will have higher performance.

Industry growth refers to the growth rates of the industry in which a firm competes and it captures the richness of opportunities in the industry (McDougall, Covin, Robinson Jr., & Herron, 1994; Porter, 1980). In the literature, industry growth has been used to reflect the level of environmental munificence (Lumpkin & Dess, 1996). Porter (1980), for example, suggests that high industry growth means that firms entering into a particular industry would not provoke strong retaliation by incumbent firms. Peng and Luo (2000) argue that a fast-going industry might offer most of its firms an opportunity to expand.

Although high growth industries offer opportunities, the window to exploit these opportunities is typically limited because as new entrants are attracted to these industries, increasing competition will soon reduce excess profits (Porter, 1980). Thus, firms' entrepreneurial strategy making will largely determine how much and how fast they can capture the "pie" in competing with their rivals. Particularly in China, its economic growth and potential market opportunities have attracted many foreign firms to get into this market. China has become the largest recipient of foreign direct investment (FDI) in the world and its annual inflows of FDI increased from US\$ 1.91 billion in 1983 to US\$ 41 billion in 2000 (UNCTAD, 2001). It appears that new ventures with a high level of entrepreneurial strategy making should have a better chance to capture growing opportunities in high growing industries through developing new products and proactively searching for new business opportunities. In addition, Lumpkin and Dess (1996: 158) argue that firms competing in munificent environments will generate additional slack resources because of relatively higher level of profits. Such slack resources can be used to facilitate experimentation with new strategies and practices, thus enhancing the effectiveness of entrepreneurial strategy making. Nonetheless, we propose,

**Hypothesis 2.** Industry growth will moderate the relationship between entrepreneurial strategy making and performance: in a high growth industry, new ventures with a stronger entrepreneurial strategy making will have higher performance.

#### *2.4. The moderating role of internal firm competences*

The effectiveness of entrepreneurial strategy making shall also depend on internal firm competences. The reason is that entrepreneurial strategy making can be inferred from the firm's willingness to incur large resource commitments to uncertain and novel business (Lumpkin & Dess, 1996). Thus it is highly risky and has strong resource requirements. This conjecture is consistent with the resource-based view, which argues that firm resources and capabilities are critical for the effectiveness of strategic management and firm performance (Barney, 1991).

As discussed earlier, entrepreneurial strategy making includes three components: risk-taking, innovativeness, and proactiveness. We argue that new ventures which engage in endeavors associated with innovativeness, risk-taking and proactiveness require the support of both technological competences and marketing competences. Technological competences refer to a venture's abilities to develop substantial technological resources and use them in the development of new products (Moorman & Slotegraaf, 1999). Marketing competences indicate a venture's abilities in the organizationwide information generation and dissemination and appropriate response related to current and future customer needs and competitive situations (Moorman & Slotegraaf, 1999). These competences can provide a resource basis for new ventures to successfully implement entrepreneurial strategic decisions. This is particularly true for new ventures in China's emerging market. Compared to their counterparts in Western economies, new ventures in China's emerging economy have relatively weak technological competences and marketing competences (Hitt, Dacin, Levitas, Arregle, & Borza, 2000). Thus, new ventures which have strong technological competences and marketing competences are more likely to successfully implement entrepreneurial strategy making and achieve better performance.

To benefit from risk-taking, innovativeness and proactiveness in strategy making, new ventures need strong technological competences. As this type of strategy making enables new ventures to identify new business opportunities, technological competences are essential for the ventures to capture these opportunities through developing high quality new products and/or pioneering technologies. If a venture is equipped with strong technological competences and adopts entrepreneurial strategy making, it can achieve first-mover advantage in competition. More importantly, this first-mover advantage is not easy for competitors to mimic. The reason is that technological competences are tacit and enjoy a tight appropriability regime under which firms are almost assured of translating their innovation into market value for some period of time (Teece, 1986). In contrast, without strong technological competences, a venture's first-mover advantages gained from entrepreneurial strategy making is not sustainable. Competitors are very likely to come up with superior technologies and products to capture new business opportunities identified by the focal firm. In this sense, without strong technological competences, new ventures will largely take the risks associated with entrepreneurial strategy making, but have little chance to take advantage of the benefits associated with it.

Marketing competences are also important for new ventures to benefit from entrepreneurial strategy making. As noted earlier, entrepreneurial strategy making involves monitoring market changes and responding quickly and taking advantage of emerging opportunities. Strong marketing competences enable the ventures to better analyze and understand unmet customer needs so they can forge new market segments. Strong marketing competences also enable the ventures to avoid commitments to wrong directions. Thus, with strong marketing competences, new ventures can identify the "right" business opportunities emerging in the process of entrepreneurial strategy making. In addition, strong marketing competences are also important for successfully commercializing new products in the market to capture

new business opportunities. For example, Royal Crown Cola developed Diet Rite, the first diet cola. However, Coca-Cola and PepsiCo took over the market because of their strong marketing competences.

Prior research has noted that there exists a technology gap between firms in emerging markets and firms in developed markets (Hitt et al., 2000). Firms in China's emerging economy have relatively less sophisticated technologies to compete with their counterparts in the West. Also, in emerging economy firms, marketing competences are often not well developed. Constrained by the legacy of Marxist ideology and government plans for a long time, Chinese firms usually have little marketing experience and have little incentive to understand and satisfy customer needs. They also have little exposure to modern marketing concepts, techniques, and processes. When technological competencies and market competences are relatively lacking in Chinese firms, those which have developed these competences are more likely to build up competitive advantage. These competencies may enhance the firms' ability of benefiting from their entrepreneurial strategy making. Based on the discussion, we propose that,

**Hypothesis 3.** Technological competences will moderate the relationship between entrepreneurial strategy making and firm performance: in new ventures with great technological competences, stronger entrepreneurial strategy making will be associated with higher firm performance.

**Hypothesis 4.** Marketing competences will moderate the relationship between entrepreneurial strategy making and firm performance: in new ventures with great marketing competences, stronger entrepreneurial strategy making will be associated with higher firm performance.

### 3. Methodology

#### 3.1. Sample and data collection

We gathered the data from the population of new technology ventures in Beijing High Technology Experimental Zone (BHEZ) in China. BHEZ is one of the most developed high technology industry zones in China. The core area of the Zone is Zhongguancun in Haidian district. There are 68 universities and 213 research institutes within the zone. Over the past decade, this zone has achieved significant growth in terms of number of ventures and industry sales. In 2000, for example, revenue in the zone was US\$ 18 billion with industrial production of US\$ 10.8 billion. Consistent with the accepted definition of a new venture, all sampled firms were eight years old or younger (see McDougall et al., 1994). We drew on a sample of 300 firms from the list of firms compiled by BHEZ Office. We sent a letter to the general managers of these ventures, explaining the purpose of the study and inviting their participation in the study.

Prior research has noted that in most emerging economies such as China the lack of reliable archival data and inadequate postal systems makes the use of archival and mail survey research methods difficult (Li & Atuahene-Gima, 2001). We collected the data by using an on-site structured interview, whereby a trained interviewer scheduled appointments, presented the key informants with a survey questionnaire, and answered general questions and collected the completed questionnaire. This approach appears to be the key to gain access to the right respondents, to ensure the correct use and understanding of the terms, and to gain better response. We obtained data from 184 firms for an effective participation rate of 61.3% (184/300). The average age of these new ventures was 4.83 years (s.d.=2.3 years). We found no statistically significant differences in terms of venture size and age between the responding and non-responding ventures.



### 3.2. Measurement and validation

Preexisting measures were identified where possible and adapted on the basis of the nature of the phenomena under study. All the multi-item constructs were measured based on a 5-point Likert scale (i.e., 1 for a low score and 5 for a high score). We averaged the items to create the scores for these constructs. Measuring performance of new ventures has been a challenging task for entrepreneurship scholars. For the purpose of this study, we chose to use self-report performance measures for several reasons. First, objective financial performance measures were unavailable for most of our sample because these ventures held their objective financial data as confidential and they were reluctant to divulge this confidential information. As McDougall et al. (1994) notes, however, more complete performance information could be obtained using subjective measures. Second, financial performance figures are often very biased for new technology ventures since they may devote their available resources to R&D and marketing for growth goals rather than for profits (Balkin & Gomez-Mejia, 1987). Third, because of the cross-sectional nature of the sample, objective performance measures of the firms are unavailable for comparisons. Finally, it has been indicated that managerial self-reportings have a strong correlation with internally objective performance measures (Dess & Robinson, 1984). New venture studies have provided substantial evidence supporting the reliability and validity of self-reported performance measures (Li & Atuahene-Gima, 2001). In this study, we used multiple measures to assess new venture performance. We asked the respondents to rate how successfully their ventures have achieved the following goals over the past three years or since its inception if the venture was less than 3 years old: return on investment, return on sales, profit growth, return on assets, and overall efficiency of operations, sales growth, market share growth, cash flow from market operations, and firm's overall reputation (1 = very unsuccessfully and 5 = very successfully). The Cronbach  $\alpha$  for this variable is 0.88.

Following Miller (1983) and Covin and Slevin (1991), we used six items to measure the extent to which the firms conducted *entrepreneurial strategy making* (1 = not at all and 5 = to a great extent). Two items measured each of the three components: innovativeness, risk-taking propensity, and proactiveness. The two items measuring innovativeness tap the extent to which the venture favors experimentation and original approaches to problem solving and design its own unique new processes and methods of production. The two items measuring risk-taking propensity tap the extent to which the venture was risk-taking in decision making and the venture has a strong proclivity for high risk projects with chances of very high returns. The two items measuring proactiveness taps the extent to which the venture is quick to seize opportunity and tries to be the first mover in the target market. Results of factor analysis show that these six items load on a single factor (one item for proactiveness was deleted because of low reliability) ( $\alpha = .75$ ).

*Environmental uncertainty* ( $\alpha = .60$ ) was measured by four items adapted from Miller (1983). We asked the informants to indicate their agreement with each of the three statements as it applies to the venture's principle industry: 1) the competitive intensity has been very high and uncertain; 2) severe price competition has been a characteristic of my industry; 3) our firm must change its marketing practices frequently to keep up with the market and competitors, and 4) the rate at which products or services become obsolete has dramatically increased (1 = strongly disagree and 5 = strongly agree).

*Industry growth* ( $\alpha = .75$ ) was measured by three items drawn from McDougall et al. (1994). The items include: 1) there is high growth in demand in this industry; 2) this industry offers many attractive opportunities for future growth; and 3) growth opportunities in this industry are abundant (1 = strongly disagree and 5 = strongly agree). The use of managerial perceptions of environment has been supported by a number of studies based on the relevance of such perceptions to the formulation of strategy

(Downey, Hellriegel, & Slocum, 1975), as well as their accuracy with respect to objective measures of environmental conditions (Dess & Robinson, 1984).

*Technological competence* ( $\alpha = .82$ ) was measured by four newly developed items for this study. These items include: 1) our venture uses sophisticated technologies in new product development; 2) our new products are always at the state of the art of the technology; 3) our firm has invested a large amount of sales into R&D; and 4) our R&D team are competent in innovation development (1 = strongly disagree and 5 = strongly agree). *Marketing competence* ( $\alpha = .80$ ) was measured by six newly developed items for this study. These items include: 1) we are able to constantly monitor our level of commitment and orientation to serving customer current and future needs; 2) we have routine or regular measures of the changes in customer demand and competitor behavior; 3) our advertising and promotion resources are more than adequate; 4) we use sophisticated techniques to do market research; 5) we have a very strong marketing team in this industry; and 6) we poll end-users frequently to assess the quality of our products and services (1 = strongly disagree and 5 = strongly agree).

We controlled for several factors in order to account for alternative explanations, including venture size, venture age, venture ownership, and industry type (Li & Atuahene-Gima, 2001; Zahra, 1991). *Venture size* was measured by the natural log of the number of full-time employees. *Venture age* was measured by the number of years the new venture has been in existence (8 years or less). *Venture ownership* was measured by asking the respondents to indicate the nature of the current ownership of the venture. There were four different types of ownership: state/collectively-owned, joint share, privately owned, and foreign invested firms (including international joint ventures). Accordingly, we created three ownership dummy variables by using foreign invested ventures as the base group. *Industry type* was also controlled. Following the standard of industry classification adopted by the Administration Commission of the Park, we classified the industries of these ventures into five types: electronic information industry, new energy and new material industry, new pharmaceutical and biotechnology industry, integrated optical industry, and others (e.g., scientific instruments and aerospace). We created four industry dummy variables by using the others type as the base group.

Our reliance on perceptual measures for both dependent and independent variables raises a legitimate concern about the potential problem of common method variance. In addition to the procedures mentioned previously, we further checked this problem with Harman's one-factor test as suggested by Podsakoff and Organ (1986). To test for this potential threat to validity, we subjected all the measures to a factor analysis. If common method variance is a serious problem, a single factor would have emerged from the factor analysis or one general factor would account for most of the variance. Our test yielded several factors with eigenvalues greater than one and no single factor was dominant, suggesting common method variance is not a problem in the data.

We further assessed the unidimensionality, reliability, and validity. First, we subjected each construct separately to principal component factor analysis. In each case, one factor emerged with an eigenvalue greater than one which provides support for the unidimensionality of the scales. Second, we calculated the Cronbach alpha for each construct. The constructs have high reliability, with all but one having alphas over 0.70. Third, to examine the convergent and discriminant validity of the measures, we conducted confirmatory factor analysis. Given the sample size restrictions, we divided the constructs into three submodels of theoretically related groups (c.f., Bentler & Chou, 1987): new venture performance and entrepreneurial strategy making ( $\chi^2 = 117.21$ ,  $p = 0.00$ ; GFI = 0.91, CFI = 0.95, NNFI = 0.94, RMSEA = 0.07); environmental uncertainty and industry growth ( $\chi^2 = 12.94$ ,  $p = 0.11$ ; GFI = 0.98, CFI = 0.97, NNFI = 0.94, RMSEA = 0.05); technological competence and marketing competences

Table 1  
Means, standard deviations, and correlations

Variables	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. New venture performance	3.53	0.62	–													
2. Entrepreneurial strategy making	3.13	0.39	0.24**	–												
3. Environmental uncertainty	3.88	0.68	-0.15	-0.12	–											
4. Industry growth	3.85	0.76	0.47**	0.21**	0.06	–										
5. Technological competence	3.56	0.72	0.40**	0.32**	0.06	0.42**	–									
6. Marketing competence	3.99	0.68	0.45**	0.22**	-0.10	0.32**	0.44**	–								
7. Venture size	160.98	200.16	0.04	0.10	-0.02	0.05	0.05	-0.09	–							
8. Venture age	4.83	2.03	-0.01	0.02	0.10	0.10	-0.03	-0.06	0.25**	–						
9. State/collective ownership	0.30	0.45	-0.27**	0.01	-0.07	-0.09	-0.08	-0.07	0.10	0.18*	–					
10. Share ownership	0.30	0.46	0.12	0.06	0.07	0.12	0.20**	0.08	-0.06	-0.05	-0.43**	–				
11. Private ownership	0.18	0.39	-0.03	-0.09	0.06	-0.06	-0.09	-0.08	-0.24**	0.04	-0.31**	-0.31**	–			
12. Electronic information industry	0.51	0.50	-0.03	-0.01	-0.02	0.02	-0.00	0.00	-0.19*	0.04	0.09	0.03	0.05	–		
13. New energy/material industry	0.13	0.33	0.03	0.09	0.14	0.01	0.04	-0.03	0.20**	0.11	0.01	0.04	-0.05	-0.38**	–	
14. New pharmaceutical industry	0.10	0.31	0.03	0.08	0.02	0.03	0.14	0.09	0.08	-0.08	-0.11	-0.03	-0.06	-0.35**	-0.13	–
15. Integrated optical industry	0.17	0.38	-0.08	-0.13	-0.02	-0.06	-0.09	-0.12	0.04	-0.05	-0.07	-0.01	0.10	-0.45**	-0.17*	-0.16*

Significance level: \* $p < 0.05$ , \*\* $p < 0.01$ .

$N = 184$ .

( $\chi^2=79.44$ ,  $p=0.00$ ; GFI=0.93, CFI=0.98, NNFI=0.97, RMSEA=0.06). All items loaded on their respective constructs, and each loading was large and significant at the 0.01 level (see the Appendix). These results indicate convergent and discriminant validity of the scales.

#### 4. Data analyses and results

Table 1 provides means, standard deviations, and correlations between variables examined in this study. We used hierarchically moderated regression analysis to test the hypotheses. To reduce the potential problem of multicollinearity, both independent and moderator variables were mean-centered prior to the creation of interaction terms (Aiken & West, 1991). We computed the variance inflation factor (VIF) for all variables in the study. Results suggested no need for concern with respect to multicollinearity.

Regression results are reported in Table 2. Model 1 in Table 2 included control variables, moderating variables, and entrepreneurial strategy making. In Model 2, the interaction terms between entrepreneurial

Table 2  
Results of regression analyses for entrepreneurial strategy making and new venture performance

Variables	New venture performance			
	Model 1 b	Model 2 b	Model 3 b	Model 4 b
Constant	1.18†	1.38*	1.29*	1.46*
Venture size	.02	.03	.02	.03
Venture age	.03	.02	.03	.03
State/collective ownership	-.55***	-.52***	-.59***	-.55***
Share ownership	-.29*	-.24†	-.31*	-.26†
Private ownership	-.15	-.09	-.18	-.16
Electronic information industry	-.02	-.06	-.06	-.06
New energy/material industry	-.04	-.05	-.06	.06
New pharmaceutical industry	-.23	-.25	-.26	-.26
Integrated optical industry	-.08	-.10	-.07	-.07
Environmental uncertainty	-.07	-.09	-.07	-.09
Industry growth	.13†	.13†	.13†	.12†
Technology competence	.23**	.21*	.22*	.21*
Marketing competence	.25**	.26**	.22**	.21*
Entrepreneurial strategy making (ESM)	.11	.08	.13	.12
Interaction Terms				
ESM * Environmental uncertainty		.26*		.32*
ESM * Industry growth		.21		.12
ESM * Technological competence			.07	-.01
ESM * Marketing competence			.51*	.60*
$R^2$	.44	.46	.47	.49
Adjusted $R^2$	.37	.38	.39	.40
F-value	5.84***	5.47***	5.62***	5.40***
$\Delta R^2$ relative to model 1		.02	.03	.05
$\Delta F$ relative to model 1		2.39†	2.74*	2.60*

N=184.

Significance level: † $p < .10$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

strategy making and environmental conditions were added to Model 1, which explained 2% more variance of new venture performance ( $\Delta F=2.39, p<.10$ ). In Model 3, the interaction terms between entrepreneurial strategy making and firm competences were added to Model 1, explaining 3% more variance of new venture performance ( $\Delta F=2.74, p<.05$ ). In Model 4, all the interaction variables were put together, explaining 5% more variance of new venture performance relative to Model 1. These significant *R*-square changes suggest the existence of interaction effects (Aiken & West, 1991). For the sake of simplicity, we used results in Model 4, which has the full model specification, to test our hypotheses.

Our results show that the main effect of entrepreneurial strategy making on new venture performance is positive but statistically insignificant across all the models. Hypothesis 1 suggests that in a highly uncertain environment, a stronger emphasis on entrepreneurial strategy making will be positively related to firm performance. This hypothesis is supported ( $b=.32, p<.05$ ). To facilitate interpretation, we plotted the interaction effect in Fig. 1. To create this figure, all variables in Model 3 except entrepreneurial strategy making and environmental uncertainty were constrained to mean. The variables of entrepreneurial strategy making and environmental uncertainty took values of one standard deviation below and above mean. As shown in Fig. 1, the relationship between entrepreneurial strategy making and new venture performance is positive when environmental uncertainty is high, but negative when it is low. However, our results do not support Hypothesis 2 which proposes that in high growth industries stronger entrepreneurial strategy making will be positively related to firm performance ( $b=.12, n.s.$ ).

Hypothesis 3 regarding the moderating role of technological competences is not supported ( $b=-.01, n.s.$ ). Hypothesis 4 states that in new ventures with great marketing competences, stronger entrepreneurial strategy making will be associated with higher firm performance. Our results support this hypothesis ( $b=.60, p<.05$ ). As shown in Fig. 2, the relationship between entrepreneurial strategy making and new venture performance is positive when marketing competence is high; but it is negative when marketing competence is low.

Among control variables, we found that state/collectively owned ventures and share owned ventures have lower performance than foreign invested ventures (including international joint ventures) ( $b=-.55, p<.001$  and  $b=-.26, p<.10$ , respectively). Consistent with Li and Atuahene-Gima's (2002) findings, it appears that new ventures which can gain support from foreign investors can perform better. In addition, industry growth ( $b=.12, p<.10$ ), technological competence ( $b=.21, p<.05$ ), and marketing competence

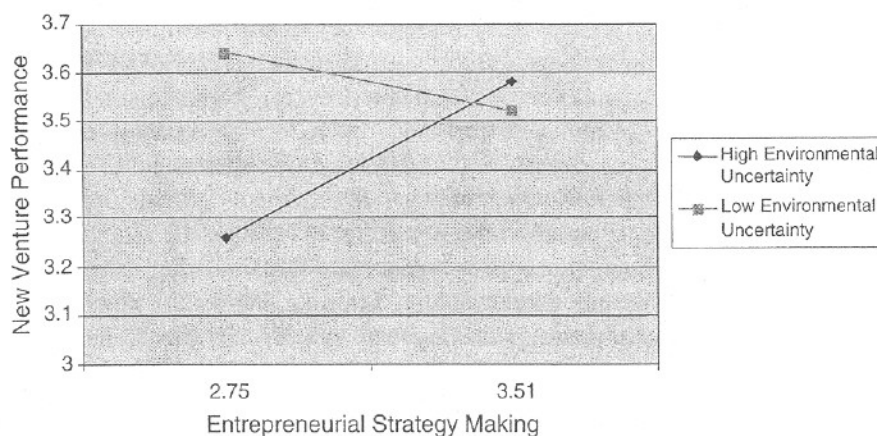


Fig. 1. The moderating role of environmental uncertainty.



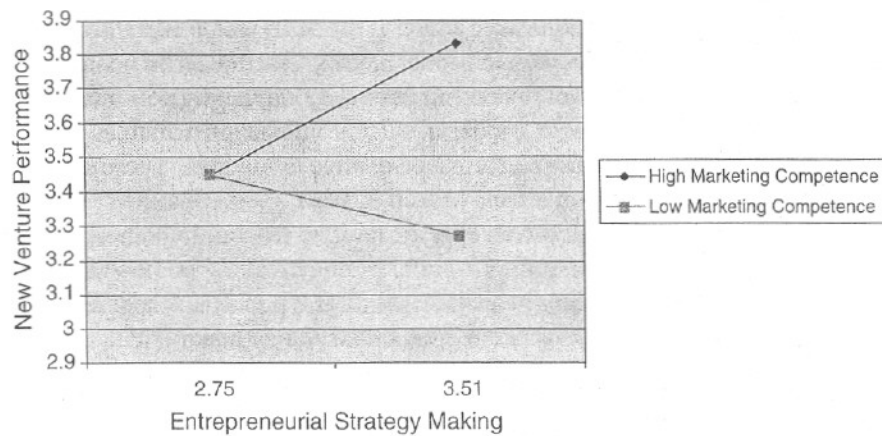


Fig. 2. The moderating role of marketing competence.

( $b = .21, p < .05$ ) are all positively related to new venture performance. As theoretically expected, when new ventures are in a growth industry with greater opportunities and when the ventures have stronger technological competence and marketing competence, they are more likely to build up competitive advantages and achieve better firm performance. Our results, however, show that environmental uncertainty has no significant relationship with new venture performance. Considering the significant interaction effect between entrepreneurial strategy making and environmental uncertainty, we may speculate that environmental uncertainty itself may not be important for new venture performance but it matters when new ventures take entrepreneurial strategy making model.

## 5. Discussion and conclusion

The important role of entrepreneurial strategy making in firm performance has been extensively studied in the literature. Our review of the literature reveals that there are two major findings: first, the direct relationship between entrepreneurial strategy making and firm performance is not significant or at best is weak. Second, this relationship is contingent on several contextual factors including environment, performance and competitive strategies. In this study we add to this stream of research by examining simultaneously the roles of external environment and internal firm competences in the relationship between entrepreneurial strategy making and firm performance in the context of new technology ventures in China's emerging economy. We argue that the value of entrepreneurial strategy making on firm performance depends on the extent to which external environments provide opportunities for new ventures to explore via their entrepreneurial strategy making, as well as the extent to which internal competences enable the ventures to capture opportunities when implementing entrepreneurial strategy making. With a sample of technology-based new ventures in China, our results support the contingency view and suggest that entrepreneurial strategy making may not have a direct relationship with firm performance. Instead, entrepreneurial strategy making has a positive relationship with performance when environmental uncertainty is high and when new ventures have strong marketing competences.

Our results that there is no direct relationship between entrepreneurial strategy making and new venture performance are consistent with the findings of other works on this topic. For example, Covin

and Slevin (1989) show that there is no significant direct relationship between entrepreneurial strategic posture and performance of small firms. With a sample of firms competing in a wide variety of industries, Dess et al. (1997) also find that the direct linkage between entrepreneurial strategy making and performance is not significant. In a recent study, Lee et al. (2001) demonstrate that entrepreneurial orientation has a very weak positive relationship with performance in technology-based startups in Korea. Given these consistent findings across different industrial and institutional contexts, we believe that the positive impact of entrepreneurial strategy making on firm performance, which has been widely claimed in the literature, is at most marginal. Our findings, coupled with others, suggest that even entrepreneurial strategy making as reflected in the organizational processes and decision-making style of a firm, can be a source of competitive advantage (Lee et al., 2001; Lumpkin and Dess, 1996), its value largely depends on the context in which it occurs. This is consistent with the contingent resource-based view which posits that a firm's resource or capability to provide sustainable competitive advantage often lies in its combination with other organizational skills and capabilities and deployment in the appropriate environment (Eisenhardt & Martin, 2000; Teece, Pisano, & Sheun, 1997).

Prior research has noted that in China's emerging economy characterized with market distortion and limited demands for new and innovative products, firms are more defensive in strategic decision making rather than risk-taking and innovative (Luo & Park, 2001; Tan & Litschert, 1994). However, our study tells a different story. Our findings imply that Chinese firms, particularly new technology ventures, can get paid off by entrepreneurial strategy making. Specifically, our results show that when the level of environmental uncertainty is perceived high and when the firm has strong marketing competencies, it is more likely to benefit from its entrepreneurial strategy making. Our study sends a clear message to practitioners that even the Chinese transitional environment is characterized with discouraging risk-related decisions (Tan & Litschert, 1994), firms can benefit from entrepreneurial strategy making depending on what they perceive from the environment and what they are able to do.

We examine the moderating role of two environmental dimensions: environmental uncertainty and industry growth. As expected, our findings indicate that entrepreneurial strategy making has a significantly positive relationship with new venture performance when the level of environmental uncertainty is high. Contrary to our hypothesis, however, we find that industry growth does not play a moderating role in this relationship. These findings suggest that environmental uncertainty and industry growth have differential impacts on the effectiveness of entrepreneurial strategy making in Chinese new ventures. It appears that high growth industries provide tremendous opportunities for new ventures competing in the industries. In such an environment, new ventures achieve better performance by taking the external opportunities rather than making entrepreneurial strategy. As Covin and Slevin (1989) argued, in benign environments (characterized by munificence and richness in investment and marketing opportunities), the relationship between entrepreneurial strategy making and firm performance may be weaker and possibly negative because in such environments firms "are not typically forced to engage in uncertain, resource-consuming endeavors in order to maintain viability" (Covin & Slevin, 1989: 77). In contrast, environmental uncertainty provides both opportunities and threats to new ventures. The extent to which new ventures can benefit from the opportunities and attenuate the threats depends significantly on their entrepreneurial strategy making. It is likely that new ventures with a high level of entrepreneurial strategy making can take advantage of the opportunities in an uncertain environment through its innovativeness, risk-taking and proactiveness, while those with a low level of entrepreneurial strategy making cannot. Using the metaphor of the theory of Darwinian evolution, most ventures (as species) can survive and succeed in "good"

environments (e.g., high growth environments), while in “bad” environments (e.g., high uncertain environments), only those who can adapt to the environments can survive and succeed. Clearly, entrepreneurial strategy making is an important way for new ventures to adapt to the uncertain environment and pursue opportunities.

These findings contribute to our understanding of the role of environmental conditions in the relationship between entrepreneurial strategy making and firm performance. Covin and Slevin (1989), for example, show that environmental hostility is an important environmental factor which may moderate the linkage between entrepreneurial strategy making and firm performance. They conceptualized environmental hostility based on a hostile–benign continuum. They defined hostile environments as those “characterized by precarious industry settings, intense competition, harsh, overwhelming business climates, and the relative lack of exploitable opportunities. Non-hostile or benign environments, on the other hand, provide a safe setting for business operations due to the overall level of munificence and richness in investment and marketing opportunities” (p. 75). Clearly, this definition of hostility includes elements of both uncertainty and munificence. Our study has advanced the literature by examining environmental uncertainty and industry growth (as an indicator of environmental munificence) separately. Our findings suggest that these two dimensions of environmental conditions play different roles in this relationship.

Our study extends the literature by examining internal firm competences as important contingency variables. The results suggest that entrepreneurial strategy making has a positive relationship with new venture performance when marketing competences are high. However, our results suggest that technological competences do not moderate this relationship. These results suggest that marketing competences are complementary assets for entrepreneurial strategy making. As noted earlier, marketing competences represent a venture’s abilities to generate and disseminate information related to current and future customer needs and competitive situations. As new ventures have better knowledge about customer demands and competitive situations, they are more able to identify and capture new business opportunities through their innovative, risk-taking, and proactive behaviors. Note that marketing resources and skills are relatively less available in China. Thus, those new ventures with marketing competencies are more likely to develop a differential advantage in enabling them to proficiently carrying out their entrepreneurial strategy making. These findings, therefore, highlight the importance of firm competences in enhancing the effectiveness of entrepreneurial strategy making.

The results of this study urge managers to pay special attention to the context requirements of successful entrepreneurial strategy making. Our findings suggest that the effectiveness of entrepreneurial strategy making is context specific and depends on the level of environmental uncertainty and/or on the firm’s marketing competences. Therefore, when making entrepreneurial strategy decisions, managers should consider the contextual variables which may limit or enhance the effectiveness of this strategy making mode. In other words, managers who ignore the contextual situations may suffer rather than benefit from entrepreneurial strategy making.

### *5.1. Limitations and further research*

The interpretations of our findings must be viewed in light of the limitations inherent to the research. Consistent with most survey research, our results primarily relied on subjective evaluation of the environment and competence variables. Hence they are subject to issues related to common method variance, though we took several actions in data collection to improve reliability and validity of

retrospective reporting. However, we believe that issues related to common method variance should not be serious in our data analysis, because there is no theoretical reason to expect an interaction from common method variance. As concluded by Evans (1985), correlated error from the use of similar methods to collect data on criterion and predictor variables cannot create spurious interactions. Nonetheless, a longitudinal design, cross-validation of the findings, and more sources of data would enable us to further assess the hypothesized relationships.

The study's cross-sectional design is also a limitation. The cross-sectional data used in this study do not allow for causal interpretations among the variables. In addition, the environmental conditions and new ventures' competences are not stable but change over time. Our results, however, do not capture the dynamics of how the change in the environment and firm competences may affect the effectiveness of entrepreneurial strategy making. Future research could investigate the dynamic relationship among the environment, firm competences and entrepreneurial strategy making by using longitudinal data.

The sample of the study could be biased because of our focus on new technology ventures. Since the firms included are new, they have a more marked entrepreneurial attitude; they are technology-based firms and therefore they have a high level of technological competence. However, even in such a group of firms with higher level of entrepreneurial attitude, we still observe the contingency effects of entrepreneurial strategy making on firm performance, which makes our findings more robust. We tend to agree that the nonsignificant results regarding the interaction term between entrepreneurial strategy making and technological competence may be that most of the firms have a high level of technological competence. Future studies should explore how our findings can be generalized to other types of firms.

Finally, this empirical study was conducted in a specific region in China and the sample is limited to new technology ventures in BHEZ. Given the sampling criterion, the sample was heterogeneous regarding factors such as venture size, industry, and ownership. Variation in the sample has the potential to increase the generalizability of the findings. Nonetheless, more research is needed to ensure that findings of this study can be extrapolated for the rest of the country. For example, currently, there are 53 high technology development zones (including the BHEZ) in China. These zones were established at different times and in different locations. Thus, it will be interesting to explore how our findings may vary for new technology ventures from other zones in different locations in the future.

Lee et al. (2001: 617) have claimed that, though the positive relationship between entrepreneurial strategy making and performance has been proposed, "the strong theoretical frame has not been combined with effective empirical work". We have advanced the literature by focusing on new ventures' entrepreneurial strategy making in China and providing insights into the environmental and organizational factors that affect the value of entrepreneurial strategy making. We hope that our results described here will facilitate further development of this important but neglected area of understanding. In particular, as China's economy is transiting toward a market-based economy and its increasingly important role in the world, more research about entrepreneurial strategy making in this emerging market has become more significant both for theory and practice.

### **Acknowledgments**

We thank the Center for International Business Studies (CIBS) at Texas A&M University for financial support.

Appendix A. Construct measurement and confirmatory factor analysis by LISREL<sup>a</sup>

Item description summary	Standardized loading	t-value
<i>Constructs in Model 1</i>		
<i>New venture performance</i>		
Indicate how successfully your venture has achieved these goals in the last three years.		
1. Return on investment	0.74	10.50
2. Return on sales	0.54	7.58
3. Profit growth	0.53	6.90
4. Return on assets	0.69	10.27
5. Overall efficiency of operations	0.80	11.51
6. Sales growth	0.58	8.28
7. Market share growth	0.59	8.40
8. Cash flow from market operations	0.57	7.47
9. Firm's overall reputation	0.60	9.03
<i>Entrepreneurial strategy making</i>		
Indicate the extent of agreement about how well the statements describe the actual norms in your venture.		
1. The top managers of my venture favor experimentation and original approaches to problem solving.	0.57	7.26
2. The top managers of my venture prefer to study a problem thoroughly before deploying resource to solve it. <sup>®</sup>	0.54	6.62
3. My venture prefers to design its own unique new processes and methods of production.	0.59	7.52
4. My firm is quick to seize opportunities that we think will give us a good payoff.	0.67	8.72
5. My firm has a strong proclivity for high risk projects with chances of very high returns.**		
6. When confronting with decision-making situations involving uncertainty, my firm typically adopts a cautious, 'wait-and-see' posture in order to minimize the probability of making costly decisions. <sup>®</sup>	0.61	7.72
$\chi^2=117.21, p=0.00; GFI=0.91, CFI=0.95, NNFI=0.94, RMSEA=0.07$		
<i>Constructs in Model 2</i>		
<i>Environmental uncertainty</i>		
1. The competitive intensity has been very high and uncertain	0.64	8.15
2. Severe price competition has been a characteristic of my industry	0.43	3.61
3. Our firm must change its marketing practices frequently to keep up with the market and competitors.	0.42	4.62
4. The rate at which products or services become obsolete has dramatically increased.	0.85	10.76
<i>Industry growth</i>		
Rate the degree to which each of these statements describes your principal industry over the last 3 years:		
1. There has been high growth in demand in this industry.	0.65	8.25
2. This industry offered many attractive opportunities for future growth.	0.85	10.42



## Appendix A (continued)

Item description summary	Standardized loading	t-value
<i>Industry growth</i>		
Rate the degree to which each of these statements describes your principal industry over the last 3 years:		
3. Growth opportunities in this industry have been abundant.	0.63	8.10
$\chi^2=12.94, p=0.11; GFI=0.98, CFI=.97, NNFI=0.94, RMSEA=0.05$		
<i>Constructs in Model 3</i>		
<i>Technological competence</i>		
1. Our venture uses sophisticated technologies in new product development.	0.73	10.39
2. Our new products are always at the state of the art of the technology.	0.70	9.67
3. Our firm has invested a large amount of sales into R&D.	0.78	11.36
4. Our R&D team is competent in innovation development.	0.67	9.40
<i>Marketing competence</i>		
1. We are able to constantly monitor our level of commitment and orientation to serving customer current and future needs.	0.57	7.43
2. We have routine or regular measures of the changes in customer demand and competitive behavior.	0.69	8.74
3. Our advertising and promotion resources are more than adequate.	0.67	8.59
4. We use sophisticated techniques to do market research.	0.63	8.06
5. We have a very strong marketing team in this industry.	0.66	8.35
6. We poll end-users frequently to assess the quality of our products and services.	0.57	7.43
$\chi^2=79.44, p=.00, GFI=.93, CFI=0.98, NNFI=0.97, RMSEA=.06$		

<sup>a</sup>For new ventures that were less than 3 years old the response time frame was since their founding.

<sup>®</sup>The item was reverse-coded.

<sup>\*\*</sup>Items were deleted because of low item-to-total correlations.

## References

- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage Publications.
- Balkin, D. B., & Gomez-Mejia, L. R. (1987). Toward a contingency theory of compensation strategy. *Strategic Management Journal*, 8(2), 169–182.
- Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17, 99–120.
- Bentler, P. M., & Chou, C. P. (1987). Practical issues in structural modeling. *Sociological Methods and Research*, 16, 78–117.
- Bourgeois, L., & Brodwin, D. (1984). Strategic implementation: Five approaches to an elusive phenomenon. *Strategic Management Journal*, 5(3), 241–264.
- Burns, T., & Stalker, G. (1961). *The management of innovation*. London: Tavistock Publications.
- Business Week (2002). Michelin. September, 23–26.

- Covin, J. G., & Slevin, D. P. (1989). Strategic management of small firms in hostile and benign environments. *Strategic Management Journal*, 10(1), 75–87.
- Covin, J. G., & Slevin, D. P. (1991). A conceptual model of entrepreneurship as firm behavior. *Entrepreneurship Theory and Practice*, 16(1), 7–25.
- Dess, G. G., Lumpkin, G. T., & Covin, J. G. (1997). Entrepreneurial strategy making and firm performance: Tests of contingency and configurational models. *Strategic Management Journal*, 18(9), 677–695.
- Dess, G. G., & Robinson Jr., R. B. (1984). Measuring organizational performance in the absence of objective measures. *Strategic Management Journal*, 5(3), 265–273.
- Downey, H., Hellriegel, D., & Slocum, J. (1975). Environmental uncertainty: The construct and its application. *Administrative Science Quarterly*, 20, 613–629.
- Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: What are they? *Strategic Management Journal*, 21(10/11), 1105–1121.
- Evans, M. G. (1985). A Monte Carlo study of the effects of correlated method variance in moderated multiple regression analysis. *Organizational Behavior and Human Decision Processes*, 36(3), 305–323.
- Hart, S. (1992). An integrative framework for strategy making processes. *Academy of Management Review*, 17, 327–351.
- Hitt, M. A., Dacin, M. T., Levitas, E., Arregle, J. -L., & Borza, A. (2000). Partner selection in emerging and developed market contexts: Resource-based and organizational learning perspectives. *Academy of Management Journal*, 43, 449–467.
- Hoskisson, R. E., Eden, L., Lau, C. M., & Wright, M. (2000). Strategy in emerging economies. *Academy of Management Journal*, 43, 249–267.
- Karagozoglu, N., & Brown, W. B. (1988). Adaptive responses by conservative and entrepreneurial firms. *Journal of Product Innovation Management*, 5, 269–281.
- Khandwalla, P. N. (1987). Generators of pioneering innovative management: Some Indian evidence. *Organization Studies*, 8, 39–59.
- Lawrence, P., & Lorsch, J. (1967). *Organization and environment*. Cambridge, MA: Harvard University Press.
- Lee, C., Lee, K., & Pennings, J. M. (2001). Internal capabilities, external networks, and performance: A study of technology-based ventures. *Strategic Management Journal*, 22, 615–640.
- Li, H., & Atuahene-Gima, K. (2001). Product innovation strategy and the performance of new technology ventures in China. *Academy of Management Journal*, 44(6), 1123–1134.
- Li, H., & Atuahene-Gima, K. (2002). The adoption of agency business activity, product innovation, and performance in Chinese technology ventures. *Strategic Management Journal*, 23, 469–490.
- Lumpkin, G. T., & Dess, G. G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review*, 21(1), 135–172.
- Luo, Y., & Park, S. H. (2001). Strategic alignment and performance of market-seeking MNCs in China. *Strategic Management Journal*, 22, 141–155.
- McDougall, P. P., Covin, J. G., Robinson Jr., R. B., & Herron, L. (1994). The effects of industry growth and strategic breadth on new venture performance and strategy content. *Strategic Management Journal*, 15(7), 537–554.
- McGrath, R. G., & MacMillan, I. (2000). *The entrepreneurial mindset*. Boston, MA: Harvard Business School Press.
- Miles, R. E., & Snow, C. C. (1978). *Organizational strategy, structure, and process*. New York: McGraw-Hill Book Co.
- Miller, D. (1983). The correlates of entrepreneurship in three types of firms. *Management Science*, 29(7), 770–791.
- Miller, D., & Friesen, P. (1978). Archetypes of strategy formulation. *Management Science*, 24, 921–933.
- Mintzberg, H. (1973, Winter). Strategy making in three modes. *California Management Review*, 44–53.
- Moorman, C., & Slotegraaf, R. J. (1999). The contingency value of complementary capabilities in product development. *Journal of Marketing Research*, 36, 239–257.
- Nee, V. (1989). A theory of market transition: From redistribution to markets in state socialism. *American Sociological Review*, 54, 663–681.
- Peng, M. W. (2003). Institutional transitions and strategic choices. *Academy of Management Review*, 28(2), 275–296.
- Peng, M. W., & Luo, Y. (2000). Managerial ties and firm performance in a transition economy: The nature of a micro-macro link. *Academy of Management Journal*, 43(3), 486–501.
- Podsakoff, P. M., & Organ, D. (1986). Self-reports in organizational research: Problems and prospects. *Journal of Management*, 12, 531–543.
- Porter, M. E. (1980). *Competitive strategy: Techniques for analyzing industries and competitors*. New York: Free Press.

- Prescott, J. E. (1986). Environments as moderators of the relationship between strategy and performance. *Academy of Management Journal*, 29(2), 329–346.
- Shenkar, O. (1990). International joint ventures' problems in China: Risks and remedies. *Long Range Planning*, 23(3), 82–90.
- Stinchcombe, A. L. (1965). Organizations and social structure. In J. G. March (Ed.), *Handbook of organizations* (pp. 142–193). Chicago, IL: Rand McNally.
- Tan, J. J., & Litschert, R. J. (1994). Environment-strategy relationship and its performance implications: An empirical study of the Chinese electronics industry. *Strategic Management Journal*, 15, 1–20.
- Teece, D. J. (1986). Profiting from technological innovation: Implications for integration, collaboration, licencing and public policy. *Research Policy*, 15, 785–805.
- Teece, D. J., Pisano, G., & Shuen, A. A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18, 504–534.
- UNCTAD, (2001). *World Investment Report*. New York: United Nations.
- Venkatraman, N., & Prescott, J. E. (1990). Environment-strategy co-alignment: An empirical test of its performance implications. *Strategic Management Journal*, 11(1), 1–23.
- Zahra, S. A. (1991). Predictors and financial outcomes of corporate entrepreneurship: An exploratory study. *Journal of Business Venturing*, 6(4), 259–285.
- Zahra, S. A., & Covin, J. G. (1995). Contextual influences on the corporate entrepreneurship–performance relationship: A longitudinal analysis. *Journal of Business Venturing*, 10(1), 43–58.