



Does Desperation Breed Deceiver? A Behavioral Model of New Venture Opportunism

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Authors	Jiang, Han; Cannella, Albert A.; Jiao, Jie
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DOES DESPERATION BREED DECEPTION?

A BEHAVIORAL MODEL OF NEW VENTURE OPPORTUNISM

ABSTRACT

We develop a behavioral-decision model to highlight entrepreneurs' decision making behind venture opportunism. We find that opportunism can present to entrepreneurs and their new ventures a risky yet beneficial choice to secure short-term gains at potential social costs. We posit that, motivated by loss aversion, entrepreneurs may accept the risk and engage in opportunism when their ventures confront economic losses. For instance, a high risk of venture failure may motivate entrepreneurs to act opportunistically in the hope that the failure can be averted. We further posit that such loss-averse decisions will be moderated by the entrepreneurs' personal bonds to their new ventures. That is, the scale of entrepreneurs' personal investment in their ventures will intensify their economic loss aversion posed by venture failure risk. In contrast, when entrepreneurs use their personal social capital to support their ventures, they will personally bear more of the down-side risks of opportunistic behavior and thus be less likely to act opportunistically to countervail a potential economic loss. Results based on the data collected from 244 NEEQ-listed new ventures in Beijing and Tianjin in China support our predictions.

Keywords: new venture, opportunism, behavioral decision making

INTRODUCTION

As a prevalent and destructive practice in interfirm relationships, opportunism, which typically represents a firm's attempts to take unfair advantage of its partners by violating mutual agreements or business moral codes (Wathne & Heide, 2000; Williamson, 1979), has attracted considerable research effort (Carson, Madhok, & Wu, 2006). This literature has primarily taken the victim's perspective to study opportunism as a ubiquitous liability in interfirm relationships, highlighting the contingencies stimulating or preventing opportunism (Williamson, 1979). However, little effort has been devoted to examining opportunism from the viewpoint of the opportunistic actors (Luo, 2007; Nooteboom, 1996; Williamson, 1975).

This research gap has particular implications for new ventures. It has been noted that compared with established firms, new ventures have a relatively high propensity to act opportunistically (e.g., Hannafey, 2003; Longenecker, McKinney, & Moore, 1988; Lorenzoni & Ornati, 1988). However, as a socially-discredited business practice, opportunism often incurs high potential costs for opportunistic firms (Das, 2006; Hill, 1990), severely endangering their reputation and legitimacy (Das, 2006; Heide & John, 1990). These costs tend to be particularly destructive to new ventures, which commonly strive to overcome the liability of newness by seeking legitimacy (Nicholls, 2010; Überbacher, 2014). The high prevalence and high risk of opportunism together present an interesting dilemma for new ventures: *Why do new ventures choose to act opportunistically despite the high potential costs?*

It has been recognized that entrepreneurs play central roles in deciding their ventures' actions (Hambrick & Finkelstein, 1987), including opportunism. As such, we draw on the behavioral decision perspective (Lichtenstein & Slovic, 2006; Tversky & Kahneman, 1992) to address the above dilemma, highlighting the behavioral decision-making mechanisms through

which entrepreneurs reach the decision, as leaders of their ventures, to act opportunistically.

We start by positing that opportunism signifies the combination of economic benefits and social costs. On the one hand, by violating formal or informal regulations (contracts, social norms, business ethics, etc.) and sacrificing partners' interests, opportunism allows firms to secure extra resources and benefits in short run (Ghoshal & Moran, 1996; Grossman & Hart, 1986). On the other hand, opportunism is socially discredited and may contaminate the reputation and legitimacy of opportunistic firms (Longenecker et al., 1988). As such, we posit that opportunism provides a risky strategic choice that includes salient benefits and costs. Accordingly, the decision of venture opportunism reflects a risk-taking context for entrepreneurs.

It is widely documented that as loss-averse decision makers, entrepreneurs are willing to take significant risks to avoid perceived losses (Chua, Chrisman, & De Massis, 2015; Koudstaal, Sloof, & van Praag, 2015). As discussed, the extra short-term gains from opportunism can help new ventures countervail exigent economic losses (Morgan & Sisak, 2016). As such, when their ventures are threatened by prominent economic losses, entrepreneurs may be motivated to grasp the economic benefits of opportunism to avoid these losses and disregard the potential costs of doing so. Particularly, a common cause of economic losses in entrepreneurship process is venture failure (Casson, 2014; Hiatt & Sine, 2014). We thus predict that when facing high venture failure risk, entrepreneurs are more likely to engage in opportunism to save their ventures.

Moreover, the behavioral decision perspective posits that decision makers' loss averse propensity tends to be affected by the way in which they may be personally influenced by the decision (Sennett, 2011). We thus predict that entrepreneurs' opportunism decisions, driven by loss aversion, will be moderated by their personal bonds with their ventures, which determine the extent to which the entrepreneurs personally bear the consequences of their new ventures'

opportunism (Arthurs & Busenitz, 2003; Cable & Shane, 1997). Parallel with opportunism's economic and social implications for the opportunistic ventures, we highlight two types of personal bonds: *entrepreneurs' personal investments in the ventures*, and *their personal network utilization in their ventures' operation*. We posit that entrepreneurs' personal investments bind their economic well-being with their new ventures, encouraging them to act opportunistically to avoid the ventures' failure. In contrast, entrepreneurs' personal network using will make them personally responsible for their ventures' opportunism, thus incurring social losses such as tainted reputation and damaged social capital and discouraging the decision of opportunism.

We contribute to the extant literature in following ways. First, drawing on a behavioral decision perspective, we explore the decision mechanism behind new ventures' opportunism. As such, our study advances the extant opportunism literature with a complementary perspective, providing a more complete understanding of opportunism. We also introduce a new, behavioral perspective to opportunism research—a perspective that complements transaction cost theory (Williamson, 1985), the major theoretical backdrop for prior opportunism research.

Second, although recent research starts to focus on entrepreneurs' (un)ethical decision making (Longenecker, Moore, Petty, Palich, & McKinney, 2006), the mechanisms behind entrepreneurial decisions are still subject to further exploration (Shepherd, 2011; Shepherd, Williams, & Patzelt, 2015). By opening the black box of decision mechanisms behind venture opportunism through the behavioral decision perspective, we contribute to the entrepreneurship literature by highlighting the decision making of unethical behaviors in new ventures.

Lastly, although the coexistence of economic and noneconomic considerations in the entrepreneurship process has long been recognized (Meindl & Ehrlich, 1987) little is known about the contrast and balance between these two considerations in entrepreneurs' decision

making (Shepherd, Patzelt, & Baron, 2013). We demonstrate the different implications of economic and social factors for the venture opportunism decision, distinguishing and contrasting the effects of entrepreneurs' economic and social bonds with their ventures. In this regard, our study complements the extant literature and points out valuable directions for future research.

THEORETICAL BACKGROUND

The Mixed Implications of Opportunism: Economic Benefits versus Social Costs

Our study starts with the notion that opportunism can be instrumentally valuable for opportunistic firms (Luo, 2006). By violating formal contracts and/or informal norms and sacrificing exchange partners' interests, opportunistic firms can illegitimately extract value from their interfirm relationships by exploiting their partners, thus leading to extra short-term gains (Das, 2006). These extra gains are particularly helpful for firms that confront intense short-term pressures (Hannafey, 2003; Jiang, Jin, Jiao, & Ma, 2009). Particularly, for new ventures suffering from the liability of newness, opportunism can enhance their resource base and mitigate short-term pressure. For example, a venture can convey a false yet attractive signal to external stakeholders, increasing its chance to form valuable ties, such as alliances and outside investment (John, 1984; Wathne & Heide, 2000). As such, the value of opportunism tends to be particularly salient for new ventures striving to survive the risky entrepreneurship process.

However, the benefits of opportunism may come with high risks and significant costs. For example, opportunism may fail to achieve the desired gains. If opportunism is quickly discovered, the victims may withhold the promised resources or other support and may even respond with lawsuits (Brown, Dev, & Lee, 2000; Kale, Singh, & Perlmutter, 2000). Moreover, as discussed above, opportunism is socially discredited because of its exploitative and illegitimate nature (Carson et al., 2006; Das & Teng, 2001; Jones, 1995). Thereby, widespread

awareness of a firm's opportunism will incur negative social responses, largely destroying the opportunistic firm's legitimacy (Das, 2006; Hill, 1990). The social costs associated with opportunism could be extremely destructive to new ventures, which intrinsically suffer from a lack of legitimacy and small social endowments (Shepherd, Douglas, & Shanley, 2000).

Taken together, the coexistence of economic benefits and social costs makes opportunism a valuable yet highly risky practice. On the one hand, the instrumental value of opportunism may encourage entrepreneurs to engage in opportunism. On the other hand, doing so is risky due to the destructive social consequences of opportunistic behaviors. This leads to the following puzzle: When will entrepreneurs decide for their ventures to engage in opportunism?

Resolve the Puzzle of Venture Opportunism: A Behavioral Decision Perspective

We draw on the behavioral decision perspective to address the above puzzle. Behavioral decision theory posits that executives, including entrepreneurs, are loss-averse actors who prefer risky choices when the alternative involves a high likelihood of losses (Sitkin & Pablo, 1992). We posit that this loss-averse tendency drives entrepreneurs' decision to act opportunistically.

Specifically, given the "creative destruction" nature of entrepreneurship, it is common for new ventures to encounter setbacks and economic losses (Shane & Venkataraman, 2000; Zhang, Souitaris, Soh, & Wong, 2008). As discussed, the beneficial economic outcomes associated with opportunism can help new ventures deal with such risks and losses in the entrepreneurship process. As such, when entrepreneurs, as loss-averse decision makers, feel threatened by exigent and prominent economic losses, they may select high-risk options and "grasp at straws", including engaging in opportunism, to avoid the potential loss and save their ventures.

It is widely acknowledged that new ventures tend to suffer from a particularly high failure rate (Shepherd et al., 2000), thus making venture failure a prevalent cause of economic

losses (Brush & Vanderwerf, 1992; Casson & Wadeson, 2007; Hiatt & Sine, 2014). Moreover, given its prominence, organizational failure is one of the central reference points in the decision making of top executives, including entrepreneurs (March & Shapira, 1987, 1992). Following this logic, we adopt venture failure risk as a key indicator of new ventures' potential economic losses to highlight the loss-aversion that drives decisions to behave opportunistically.

Furthermore, actors' risk-taking decisions are influenced by the way in which they may personally bear the consequence of the decision (Devers, McNamara, Wiseman, & Arrfelt, 2008; Douglas, 2013). For example, Li and colleagues (2012) show that people are more loss-averse when encountering potential personal hazards. Entrepreneurs, as the primary strategic leaders of new ventures, often personally bear the consequences of their new ventures' actions, including opportunism (Carpenter, Geletkanycz, & Sanders, 2004; Meindl & Ehrlich, 1987; Semadeni, Cannella, Fraser, & Lee, 2008). We thus predict that entrepreneurs' opportunism decision will be further affected by the way in which they would be personally affected by the opportunism.

We highlight such personal risk bearing with entrepreneurs' personal bonds with their ventures. These personal bonds determine how entrepreneurs would be personally responsible for their ventures' operation and outcome, including opportunism (Jensen & Meckling, 1976; Oviatt, McDougall, & Marvin, 1995). Following prior studies (Arthurs & Busenitz, 2003; Larson & Starr, 1993), we focus on two key personal bonds: *the entrepreneurs' personal investment in their ventures*, which depicts their economic commitment in the ventures, and *the extent to which they use their personal networks in the ventures*, which indicates the entrepreneurs' social embeddedness in their ventures' interfirm contacts (Uzzi, 1997). We posit that these bonds bind the entrepreneurs' personal well-being with the economic and social consequences of their new ventures' opportunism, thus affecting the entrepreneurs' venture opportunism decisions.

Building on the theory outlined above, we develop hypotheses to investigate how new ventures' failure risk may affect the entrepreneurs' venture opportunism decisions. We then investigate the moderating effects of entrepreneurs' personal bonds with their ventures (personal investment and personal network use) on the decision regarding their ventures' opportunism.

HYPOTHESIS DEVELOPMENT

Venture Failure Risk and New Venture Opportunism

New ventures generally go through an adaptive process through which they establish repetitive organizational processes and accumulate know-how. This process is characterized by high uncertainty (Hmieleski & Baron, 2009). That is, without the guidance of established routines and path dependence, new ventures need to invest heavily in "trial-and-error" learning, which signifies frequent mistakes and unstable outcomes (Miller, 2007). Given the intensive investment requirements and unstable returns in the entrepreneurship process, new ventures may fall short of necessary resources to survive (Cope, 2011; Eisenhardt & Schoonhoven, 1990). Meanwhile, new ventures generally lack legitimacy because they are not fully embedded in their institutional environments (Bruderl & Schussler, 1990; Freeman, Carroll, & Hannan, 1983). The lack of legitimacy hampers new ventures from securing necessary external support, further threatening their survival (Palmer, Friedland, & Singh, 1986; Shepherd et al., 2000). As a result, it has been widely noted that new ventures suffer from a particularly high risk of failure, which is a prevalent cause of ventures' economic losses (Zimmerman & Zeitz, 2002).

When their ventures are facing high failure risk, entrepreneurs may be motivated to take additional risk if it might save the venture from failing (Morgan & Sisak, 2016). Specifically, the behavioral decision perspective posits that actors' risk-taking is determined by their allocation of attention, such that decision makers tend to shift their attention and frame their risk-taking

decisions using the most prominent and exigent occasion as reference point (Devers et al., 2008; Hannafey, 2003). Executives commonly adopt organizational survival as a critical reference point in their decision making (Holland & Shepherd, 2013; Tversky & Wakker, 1995). Moreover, the closer a firm is to bankruptcy or organizational failure, the more attention the executives will devote to the firm's survival (Ren & Guo, 2011). This failure-avoidance tendency is particularly salient among entrepreneurs, who are largely motivated by "the fear of failure" in the operation of their ventures (Arenius & Minnitti, 2005; March & Shapira, 1992). As the failure risk of new ventures increases, it becomes more and more salient as a reference point that draws the attention of entrepreneurs in their decision making. As loss-averse actors (Chua et al., 2015; Morgan & Sisak, 2016), entrepreneurs will be motivated by the high venture failure risk to engage in risky actions that might protect their ventures from failing (Forlani & Mullins, 2000; Haimes, 2015).

We posit that opportunism is among these risky actions that can help entrepreneurs save their ventures. Specifically, despite its destructive social costs, opportunism allows new ventures to draw resources from their interfirm exchange partners (suppliers, buyers, investors, etc.) (Hill, 1990; Miller & Chen, 2004). For example, by engaging in *ex-ante* opportunistic activities, such as manipulating information disclosure and making false promises (Jones, 1995), new ventures can better attract important interfirm partners that can provide access to resources critical for the success of the entrepreneurship process. Likewise, *ex-post* opportunism, such as shirking duties and wrongfully appropriating key resources of their partners (Heide & John, 1990; Williamson, 1975), allows new ventures to extract more value from their ongoing interfirm relationships in the short run (Zhou & Poppo, 2010). The benefits of opportunism tend to be critical for new ventures to complement their startup resource bases and compensate for their lack of legitimacy, thus effectively helping them overcome the liability of newness and countervail their failure risk.

Moreover, as discussed, the loss-averse tendency will drive entrepreneurs to be willing to grasp at straws to save their ventures from failing regardless of the risk of doing so (Forlani & Mullins, 2000; Hill, 1990), therefore increasing the entrepreneurs' tolerance for the potential social costs of opportunism. Furthermore, when venture failure looms in entrepreneurs' decision making as the reference point, they will be more short-term oriented, such that the immediate pressure of venture survival tends to take priority over the long-term well-being of the new ventures (Das, 2006; Das & Kumar, 2010; Hannafey, 2003; Koudstaal et al., 2015). In this regard, the severe yet long-term social costs associated with opportunism, such as tainting their reputation, damaging their legitimacy, and jeopardizing their formation of future interfirm relationships (Carson et al., 2006; March & Shapira, 1992), tend to be less prominent to entrepreneurs facing the exigent threat of high venture-failure risk. Taken together, we posit that high venture-failure risk tends to drive entrepreneurs to be willing to grasp the benefits of acting opportunistically and bear the potential social costs of doing so.

Hypothesis 1: A new venture's failure risk will be positively associated with the level of opportunistic behavior.

Entrepreneurs' Personal Bonds with New Ventures and the Opportunism Decision

Entrepreneurs, as individual persons, are both economically and socially bonded with their new ventures (Finkelstein, Hambrick, & Cannella, 2009; Jones, 1995). For example, entrepreneurs' career achievement largely relies on the success of their ventures (Katz & Green, 2009; Sennett, 2011). Likewise, it is not unusual that entrepreneurs, especially founders, are known by their new ventures (Timmons, 1989). Through these personal bonds between entrepreneurs and their new ventures, the entrepreneurs' personal utility, including both their economic and social wellbeing, will be linked with the operations and outcomes of their ventures (Arthurs & Busenitz, 2003; Larson & Starr, 1993; Shane & Venkataraman, 2000). In this regard,

we posit that entrepreneurs' personal bonds with the opportunistic ventures will make them personally bear the economic and social consequences of new venture opportunism, thereby potentially altering entrepreneurs' decision for their ventures to act opportunistically.

Entrepreneurs' personal investment. It is common for entrepreneurs to have invested a portion of their personal wealth in their new ventures (Allen, 2015; Burke, Fraser, & Greene, 2010; Shepherd et al., 2015). These personal investments serve as important economic bonds that tie entrepreneurs' personal economic wellbeing with the success of their ventures (Arthurs & Busenitz, 2003; Chemmanur & Fulghieri, 2014). That is, by making personal investments in the new ventures, entrepreneurs serve as the owners of the ventures and are entitled to claim the ventures' economic residual. Accordingly, the personal economic wellbeing of the entrepreneurs will be aligned with the economic outcome of the ventures. Moreover, the personal investments entrepreneurs have made in the new ventures will also make them personally bear the economic consequences of their decisions (Alchian & Demsetz, 1972; Jensen & Meckling, 1976). As a result, as their personal investments increase, entrepreneurs will be more motivated to make decisions to ensure the economic wellbeing of their ventures (Fama & Jensen, 1983).

Following this logic, we posit that entrepreneurs' personal investments in their ventures will encourage them to act opportunistically so as to countervail their ventures' high failure risk. Specifically, an entrepreneur's personal investment in a new venture tends to serve as a specific asset that cannot be redeployed or regained should the venture fail (Busenitz & Barney, 1997). As such, the more personal investments the entrepreneurs have made in the ventures, the more they would personally bear the potential economic loss associated with venture failure. Prior behavioral decision studies have revealed that loss-averse actors tend to be more willing to take high risk to avoid potential loss if they would otherwise personally bear the loss (Arthurs &

Busenitz, 2003; Breakwell, 2014). Drawing on this insight, when threatened by possible venture failure, entrepreneurs with heavy personal investments in their ventures will be more loss-averse and more willing to engage in opportunism to save their ventures despite the risk of doing so.

By the same token, when entrepreneurs have made high personal investment in their new ventures, the benefits of opportunistic behaviors not only protect the opportunistic ventures from failing, but also prevent the entrepreneurs' personal economic loss (Cain & McKeon, 2016). As such, they personally enjoy the economic benefits of their new ventures' opportunistic behavior, thus further encouraging them to make the risky decision of venture opportunism (Breakwell, 2014; Wiseman & Gomez-Mejia, 1998). Taken together, we have the following hypothesis:

Hypothesis 2: An entrepreneur's personal investment in the new venture strengthens the positive effect of the venture's failure risk on the level of opportunistic behavior.

Entrepreneurs' Personal Network Using. As the major leader of their new ventures, entrepreneurs may use their personal networks to support the operation of their ventures (Baum & Silverman, 2004; Knight, 2013; Larson & Starr, 1993). The utilization of entrepreneurs' personal networks reflects the logic of social embeddedness – “commercial transactions take place through social relations and networks of relations that use exchange protocols associated with social, noncommercial attachment to govern business dealing” (Li & Zhang, 2007). That is, entrepreneurs can draw on the interpersonal norms of mutual support and trustworthiness attached to their personal networks to obligate interfirm contacts to be more supportive to their ventures, thus enhancing the ventures' survival (Gulati; Shane & Cable, 2002; Uzzi, 1999).

However, by attaching the relational norms and affections to interfirm relationships and regulating economic transactions with these interpersonal codes, entrepreneurs intertwine their social ties with their ventures' interfirm transactions (Uzzi, 1996), such that interfirm partners may choose to enter the relationships with the new ventures largely out of their personal

relationships or obligations to the entrepreneurs. As a result, the socially undesired actions or outcomes occurring in these interfirm relationships will violate the interpersonal codes involved in the social ties in use, therefore leaving the entrepreneurs personally taking responsibility for the socially discredited occasions. Therefore, the utilization of entrepreneurs' personal networks establishes strong social bonds between the entrepreneurs and their new ventures, making the entrepreneurs personally bear the social consequences of their ventures' operation.

Following this logic, we posit that entrepreneurs' personal network using will discourage them from acting opportunistically to save their new ventures from failing. That is, by violating widely held principles of business ethics and social norms, opportunism is socially discredited as a business practice (Larson & Starr, 1993). As a result, opportunism endangers the opportunistic firms' reputation and legitimacy (Das, 2006; Longenecker et al., 1988), and contaminates its social identity (Heide & John, 1990). As discussed above, by using their personal networks to support their ventures, entrepreneurs tend to be personally bonded with their firms' discredited actions and events (Carpenter et al., 2004; Devers, Dewett, Mishina, & Belsito, 2009; Meindl & Ehrlich, 1987). Accordingly, the ventures' organizational stigma arising from opportunism may transfer through these social bonds and personally stigmatize the entrepreneurs (D'Aveni, 1990; Kulik, Bainbridge, & Cregan, 2008; Sutton & Callahan, 1987), thus incurring significant personal social losses for these entrepreneurs (tainted reputation, damaged social identity, and the loss of valuable personal ties) (Wiesenfeld, Wurthmann, & Hambrick, 2008).

According to behavioral decision theory, loss-averse actors are less likely to take risky actions to avoid perceived loss when they may personally bear the downside risk and negative consequences of the risk taking (Jiang, Cannella, & Jiao, 2012). Moreover, recent managerial decision studies reveal that managers, including entrepreneurs, are motivated to preserve their

social networks and personal identities in their decision making, even if doing so leads to potential economic costs (Aggarwal & Zhang, 2006; Wiseman & Gomez-Mejia, 1998). For example, Gomez-Mejia and colleagues (1993) found that family firm owners are willing to sacrifice economic efficiency to protect socioemotional wealth (e.g., the reputation and social status of the family). Therefore, when entrepreneurs intensively use their personal networks to support the operation of their ventures, the consequent social losses linked to venture opportunism they may personally bear (contaminated reputation, damaged social capital, etc.) tend to discourage them from grasping the economic benefits of new venture opportunism, even if doing so may help save their ventures from failing. We thus hypothesize:

Hypothesis 3: An entrepreneur's personal network use in the new venture weakens the positive effect of the venture's failure risk on the level of opportunistic behavior.

METHOD

Sample

High-technology ventures listed on the *National Equities Exchange and Quotations* (NEEQ) market in China provides a suitable context for our study. Formally opened in 2013, the NEEQ market provides an accessible financing platform for new ventures, especially high-technology ventures, in China. As such, NEEQ has relatively low entry barriers. For example, it has no requirement for the minimal levels of profit or asset scale for NEEQ-listed firms, and only requires a minimum operational history of two years. More importantly, NEEQ-listed firms are obligated to disclose accurate financial reports and are subject to third-party auditing, thus providing publicly accessible information about Chinese high-technology ventures. Moreover, it has been noted that high-tech industries are characterized by prevalent entrepreneurship practices and intensive interfirm cooperation (Dowling & McGee, 1994; Gomez-Mejia, Haynes, Nunez-Nickel, Jacobson, & Moyano-Fuentes, 2007; McDougall, 1989), thus providing an ideal

industrial contexts to test new ventures' actions and decision making in interfirm relationships.

We adopted the NEEQ-listed new ventures in two self-governed municipalities, i.e., Beijing and Tianjin, as our research setting. These two cities have well-established industrial value chains and infrastructures, strong connections and cooperation between firms and research institutes, and large population of institutional investors (*China yearbook, 2015*). The munificent environments can encourage entrepreneurial actions, thus leading to the geographic clustering of NEEQ-listed ventures in this region. This feature allows us to capture the opportunism of our sample ventures. That is, it is widely noted that opportunism can be judged most objectively and accurately by external stakeholders who have relational experience with the firms in question (Wadhwa & Kotha, 2006). The geographic clustering tendency of NEEQ-listed ventures in Beijing and Tianjin leads to relatively localized interfirm networks where many NEEQ-listed ventures are mutually connected or bridged by mutual third-party partners. These networks thus allow us to locate qualified informant firms to assess our sample ventures' opportunism. Taken together, the selected research setting is well suited to the phenomenon of interest in our study.

Data Collection

Our dataset consists of both primary and secondary information of NEEQ-listed ventures. The secondary data was extracted from sample ventures' annual reports. The primary data was collected between April 2015 and May 2016. Before the formal survey, we conducted 17 semi-structural interviews with top executives in 11 NEEQ-listed firms to ensure the content validity of our survey items. Interviewees were asked to check the relevance and completeness of our items based on their experience. Based on their feedback, we made minor adjustments to our survey items to enhance their content validity in our research setting. We then conducted a pilot study with 41 top executives in 24 NEEQ-listed ventures and finalized the formal questionnaire.

The formal data collection process included multiple stages (see Appendix 1 for details). First, with the assistance of a government-funded national research institute, we contacted 2,124 NEEQ-listed firms registered in Beijing and Tianjin. 337 firms (15.9%) agreed to participate in our study. We compared the participating firms with nonresponding ones in terms of their asset scale, firm age, and the number of employees, and found no significant nonresponse bias.

Prior entrepreneurship studies in China have commonly defined new ventures as firms younger than 5 years (e.g., Li & Zhang, 2007; Luo, 2007). Our interviewees from the pilot study agreed with this criterion for identifying new ventures among NEEQ-listed firms. As such, we defined new ventures as firms founded within the past 5 years. According to this standard, 285 of the 337 firms (84.6%) were classified as new ventures. We used the 285 NEEQ-listed ventures as our primary sample frame, and the other 52 firms for robustness check.

As discussed, firms' opportunism is best assessed by their interfirm contacts. We used name generator method to identify informant firms that could assess the opportunism of the sample NEEQ-listed firms. We surveyed all the 337 participating NEEQ-listed firms, requesting their CEOs or general managers to indicate 5 to 10 firms with which they have or have had business relationships. After a follow-up reminder, we received 221 responses nominating at least 5 firms, 67 responses nominating less than 5 firms, and 49 ineffective responses including no nominations. The 288 (221+68) effective responses nominated a total of 742 individual firms, where 13 firms (1.8%) were nominated at least 5 times, 28 firms (3.8%) nominated 4 times, 69 firms (9.3%) nominated 3 times, and 187 firms (25.2%) nominated twice. We used these 742 nominated firms as our informants to assess the opportunism of the 285 sample ventures.

After identifying the 285 sample new ventures and 742 informant firms, we conducted the next round of surveys. We used a temporally lagged design involving two time periods to

avoid consistency biases (Zhao & Aram, 1995), conducting Time 2 survey approximately five months after Time 1 survey. We surveyed the sample NEEQ-listed firms and the informant firms with different questions to reduce self-report bias of opportunism. All 337 NEEQ-listed firms only participated in Time 1 survey and provided information about independent variables. The 742 informant firms were asked to assess the NEEQ-listed firms' opportunism in both Time 1 and Time 2 surveys. To ensure a good response rate from the informant firms, we asked NEEQ-listed firms to provide the contact information of each informant firm they nominated, and benefited from the assistance of local governments in the communication with informant firms.

Of the 337 NEEQ-listed firms, 289 (85.8%) both provided effective responses to the Time 1 survey and received opportunism evaluation from at least one informant firm, including 244 new ventures and 45 established firms. Of the 742 informant firms, 549 (74.0%) provided effective responses in at least one survey, including 501 (67.5%) that effectively responded to both Time 1 and Time 2 surveys. Responding firms showed no difference from the non-responding firms in average age, asset scale, and number of employees. Our final sample for hypothesis testing consisted of the 244 NEEQ-listed new ventures. We then used the 45 established firms listed on NEEQ board for robustness check. The responses from the 549 informant firms were used to assess sample ventures' opportunism.

Variables and Measures

Table 1 provides a list of our major survey items, reporting the reliability statistics and the results of a confirmatory factor analysis. Since some measures originated from prior studies published in English, we consulted three Chinese experts in entrepreneurship research who had previously worked in US universities to ensure the accuracy of our translation.

Insert Table 1 About Here

New venture opportunism. Our six-item opportunism measure was built on earlier studies (Anderson, 1988; John, 1984; Podsakoff & Organ, 1986). Based on pre-survey interviews, we adjusted several items to fit the uniqueness of our industry. We measured opportunism with a whole network design (c.f., Luo, 2007; Marsden, 1990), i.e., each informant firm was asked to answer the six questions regarding each firm with which it was related or aware of in operation. We also asked each informant firm to report the length of its interfirm relationship with each venture it assessed.

We used the intra-class correlation coefficient (ICC) to assess the inter-rater agreement of the opportunism measure. ICCs reflect the extent to which between-group variance is significantly greater than within-group variance (Scott, 2000). The ICC of opportunism scores is 0.57, showing moderate agreement. This indicates that a new venture's overall opportunistic tendency, as judged by our informants, is relatively consistent across all informant firms.

Following the suggestions of prior studies (Kenny & La Voie, 1985), we also checked the R_{wg} scores of the opportunism ratings received by sample ventures. R_{wg} captures whether the within-group variance is significantly smaller than the variance when raters are randomly rating. Results show that the median R_{wg} across the 244 ventures' opportunism scores is 0.52, and 37 ventures (15.2%) have R_{wg} higher than 0.7.

We attribute the moderately low R_{wg} scores to the nature of opportunism. It has been noted that opportunism is a multidimensional construct and can be represented by different actions (James, Demaree, & Wolf, 1984). As such, a firm's opportunistic actions may vary significantly across interfirm partners due to the different nature of their relationships. For example, a new venture can intentionally delay its product delivery to its customers, but will not do so to R&D partners. Since our opportunism measures capture multiple forms of opportunistic

behaviors, it is likely for a sample venture to receive diverse assessments from informant firms with different types of relationships, thus leading to lower within-group agreement.

Based on the above findings, we measured venture opportunism in two different ways. First, for each new venture, we weighted the appraisal of each informant firm on each item by the relational history between the venture and the informant firm, and used the weighted mean as the opportunism score for our main analyses. We also used the maximum assessment of opportunism received by each sample venture as an alternative measure of its opportunism and conducted a sensitivity analysis to gauge the robustness of our analysis.

New venture failure risk. Following prior studies (e.g., Deephouse & Wiseman, 2000; Miller & Chen, 2004; Wathne & Heide, 2000), we adopted Altman's Z score to capture new ventures' failure risk. Altman's Z measures firms' bankruptcy risk, with lower Z scores indicating a higher likelihood of bankruptcy (Altman, 1983; Xia, Dawley, Jiang, Ma, & Boal, 2016). To better reflect the specificity in Chinese contexts, we captured the failure risk of our sample ventures with the following adjusted calculation of Altman's Z, which was specifically designed for Chinese publicly-listed firms (c.f., Altman, 2000; Wang & Campbell, 2010):

$$0.806 \times \frac{\text{net working capital}}{\text{total assets}} - 0.290 \times \frac{\text{retained earnings}}{\text{total assets}} + 0.044 \times \frac{\text{earnings before interest and taxes}}{\text{total assets}} \\ + 0.197 \times \frac{\text{sales}}{\text{total assets}} + 6.333 \times \frac{\text{market value of equity}}{\text{book value of liability}}$$

Firms with Z-scores less than 2.2373 are predicted to go bankrupt and Z-scores greater than 2.2373 are predicted to survive. We used the difference between 2.2373 and a new venture's Z score to measure its failure risk. This measure was lagged by one year.

Entrepreneurs' personal investment. Following prior studies (e.g., Zhang, Altman, & Yen, 2010), we measured an entrepreneur's personal investment in his/her new venture with the total market value of his/her personal shareholding. We collected this information in our Time 1

survey and cross-checked the reliability of each response with the annual report data.

Entrepreneurs' personal network using. We measured entrepreneurs' efforts to use their personal networks with the items developed in prior studies (Acquaah, 2007; Busenitz, Fiet, & Moesel, 2004), asking entrepreneurs for the extent to which they have used personal ties with customers, suppliers, competitors, and investors, in their new ventures' operation. Based on our pre-survey interviews, we added an extra item—ties to investors—as a part of our measure.

Control variables. We adopted control variables at multiple levels. For entrepreneurs' individual characteristics, we controlled for their *age*, *education*, *gender*, *industrial experience*, and *whether they were on the venture founding team* (1 for yes and 0 for no). For firm-level features, we controlled for new ventures' *performance* (measured by return on asset (ROA)), *asset scale*, *state ownership* (measured by the ratio between a venture's state capital received and the total capital received), and *location* (1 for Beijing and 0 for Tianjin).

Furthermore, it has been noted that firms' opportunistic behaviors are subject to the influence of environmental volatility (Peng & Luo, 2000). Environmental volatility refers to the unpredictability of the contextual factors in a given industrial setting over time (Boyd, Dess, & Rasheed, 1993; Carson et al., 2006). We captured environmental volatility with two constructs, i.e., information unverifiability and institutional inefficacy. Information unverifiability refers to the extent to which the information about business environments is hard to validate. Institutional inefficacy captures to what extent the legal system lacks law enforcement and experiences frequent unjustified regulatory changes (Luo, 2007). Both variables were measured by the items developed by Luo (2009), with minor adjustments based on pre-survey interviews.

We conducted confirmatory factor analysis (CFA) to capture the two latent variables, i.e., informational unverifiability, and institutional inefficacy. As reported in Table 1, all non-fixed

indicators loaded appropriately and significantly. In practice, factor loadings higher than 0.7 are considered acceptable (Baum, Nichols, & Schaffer, 2010). All items meet this criterion. The CFA model also shows high goodness of fit: normed fit index (NFI) =0.93; non-normed fit index (NNFI) =0.94; comparative fit index (CFI) =0.93; root mean square error of approximation (RMSEA) =0.0497. These results suggest high reliability of our measurement model. We also use Cronbach's Alpha (α) to test the internal consistency of our measures. As reported in Table 1, both latent variables demonstrate adequate internal consistency (α higher than 0.70).

Analytical Strategy

As discussed above, we adopted the name generator method to create our list of informant firms. According to network research methodology (e.g., Carpenter, Li, & Jiang, 2012; Luo, 2007), it is necessary for us to address the potential for sample selection bias, where our major predictors may make certain firms more or less likely to be nominated as informant firms. As such, we applied Heckman's selection model (Scott, 2000) to control for possible sample selection bias. We first identified 357 firms that were mentioned in the 244 sample ventures' annual reports as interfirm contacts but not nominated as informant firms. We then formulated a probit model using all our major predictors and a firm's asset scale and performance to estimate the probability for this firm to be nominated. In the selection equation, the firm's asset scale and performance served as instruments that were not included in the final models. Then, we calculated the inverse Mills ratio and added it to our statistical models as a control variable.

Meanwhile, it has been recently recognized that managers' personal network utilization is a result of an intentional decision, which may be subject to the influence of firm-level operational practices (Heckman, 1979). As such, entrepreneurs' personal network utilization may be influenced by the opportunistic actions of their ventures, thus leading to potential endogeneity

(Carpenter et al., 2012; Hamilton & Nickerson, 2003). To resolve the endogeneity problem, we used a two stage instrumental-variable regression, where entrepreneurs' personal network utilization is the endogenous estimator. We adopted two instrumental variables—entrepreneurs' *professional status* and *political status*. We measured entrepreneurs' professional status with their eigenvector centrality in the board interlock network across all publicly listed firms, and political status with the number of years they have served in government or government-funded organizations (state-owned banks, public universities, etc.). The instruments were used together with the opportunism score from the Time 1 survey and all individual-level controls to predict entrepreneurs' personal network use. In the Stage 2 model, we used the estimated value of entrepreneurs' personal network use from Stage 1 to estimate venture opportunism from the Time 2 survey. Following prior studies (e.g., Shaver, 1998), we used the generalized method of moments (GMM) approach to estimate both stages.

In the estimation of both stages, we clustered observations based on ventures' industrial membership (Bascle, 2008). The robust-clustered standard error calculation helps address concerns about industry-level heteroscedasticity (Wooldridge, 2002),

RESULTS

Table 3 reports the results of two-stage instrumental variable regression. Model 1 of Table 3 demonstrates the results of Stage 1 estimation, and Models 2 through 5 provide the results of Stage 2 estimation. Model 2 includes the main effects of three theoretical variables. Models 3 and 4 add the two interaction terms, respectively. Model 5 is the full model of Stage 2 estimation including all explanatory variables and interaction terms. The average variance inflation factors (VIFs) was 3.79 (the maximum VIF was 4.86), indicating no significant multicollinearity.

Insert Tables 2 & 3 about Here

Model 1 shows that the instruments were significantly related to the endogenous variable, i.e., entrepreneurs' personal network using. The R-square of Stage 1 estimation is 0.908. These results confirmed the strength of our instruments. Furthermore, we conducted the Hansen-Sargan χ^2 test for over-identifying restrictions. Results also supported the conclusion that the chosen instruments in the first stage were exogenous (Fornell & Larcker, 1981). Plus, all instruments had insignificant effects when they were included in the stage-two models to estimate managerial personal tie activation, further supporting their validity as instruments (Murray, 2006).

Hypothesis 1, which predicted that a venture's failure risk will stimulate its opportunism, is supported by the evidence reported in Model 2. That is, new venture failure risk is strongly and positively related to venture opportunism ($b=1.81$, $p<0.001$). Meanwhile, regarding main effects for the two moderator variables, entrepreneurs' personal network using significantly discouraged their new ventures' opportunism ($b=-1.49$, $p<0.001$). In contrast, entrepreneurs' personal investment had a negligible effect on new venture opportunism ($b=0.20$, ns.).

Hypothesis 2 predicted that entrepreneurs' personal investment would strengthen the positive effect of new ventures' failure risk. This hypothesis is strongly supported. Results in Model 3 show that the interaction term between venture failure risk and personal investment is positively related to venture opportunism ($b=1.53$, $p<0.01$, see also Figure 1).

Likewise, Hypothesis 3, which predicted that entrepreneurs' personal network use weakens the positive effect of venture failure risk on new venture opportunism, is also strongly supported. Results in Model 4 show that the interaction between venture failure risk and personal network use is negatively related to venture opportunism ($b=-0.45$, $p<0.001$, see also Figure 2).

Besides, we conducted two sensitivity analyses to confirm the robustness of our findings. First, we changed our 5-year cutoff of new ventures to 3 years and 10 years, two other widely

used cutoff criteria in prior entrepreneurship research, and reproduced our Stage 2 estimates with the altered sample sets respectively. Second, we also reproduced the Stage 2 estimates with the alternative measure of opportunism, which was based on the maximum opportunism score received by each venture. Results of both sensitivity analyses showed high consistency with our primary analysis. The results of the sensitivity analyses are available upon request.

With respect to our significant control variables, Model 2 shows that new venture opportunism is less intensive for entrepreneurs with longer industrial experience ($b=-0.12$, $p<0.01$) and for ventures with more asset ($b=-0.18$, $p<0.05$) and lower proportion of state ownership ($b=0.44$, $p<0.01$). Also, consistent with prior environmental volatility research (e.g., Jiang et al., 2009; Luo, 2007), institutional inefficacy is positively related to new venture opportunism ($b=0.28$, $p<0.05$). Lastly, the effects of the inverse Mills ratio are insignificant in all of our statistical models, suggesting that our analyses do not suffer from sample selection bias.

DISCUSSION

In this study, we strived to highlight the decision-making mechanisms through which entrepreneurs determine their new ventures' opportunism. Namely, we posited that opportunism is a risky practice which can lead to economic benefits and social losses for the opportunistic firms (Das, 2006; Hansen, 1982). As such, new ventures' opportunism intrinsically reflects a risk-taking decision, where entrepreneurs determine whether or not to assume the social costs of opportunism to grasp the short-term benefits of doing so. Drawing on a behavioral decision perspective, we argue that as loss-averse actors, entrepreneurs tend to be motivated to act opportunistically in order to protect their new ventures from perceived economic loss.

Focusing on new venture failure, a particular case involving salient economic loss, we posit that when a new venture is threatened by prominent risk of organizational failure, the loss-

averse entrepreneurs tend to be motivated to do whatever they can to save the venture regardless of the potential risk involved. Given its beneficial implications in the short run, opportunism can provide such a risky choice that may help the entrepreneurs save their ventures from possible failure. Although doing so may lead to destructive social consequences for the opportunistic ventures and jeopardize their long-term development (Rutherford, Buller, & Stebbins, 2009), the immediate pressure of organizational survival tends to loom in entrepreneurs' decision making as the most critical and exigent reference point and thus can outweigh the long-term concerns and encourage entrepreneurs to reach the decision for their ventures to act opportunistically.

We further highlight the roles of the ways in which the entrepreneurs are economically and socially bonded with the opportunistic ventures. That is, these binds between entrepreneurs and their ventures connect the entrepreneurs' personal economic and social wellbeing with their ventures, thus making the entrepreneurs personally bear the benefits and costs of venture opportunism and altering their decision making. We thus argue that entrepreneurs' personal investment in their new ventures tends to encourage the entrepreneurs to engage in opportunism to save the ventures from failing, while their efforts to use their personal networks to support their new ventures discourage the entrepreneurs from doing so. Results based on the data collected from 244 NEEQ-listed new ventures in China strongly supported our behavioral model.

Taken together, the findings of this study shed light on the decision mechanisms behind firms' opportunism in interfirm relationships. As we discussed, little attention has been devoted to opening the black box of opportunistic decision making, making it hard to fully unveil why some firms are more opportunistic than others in similar transactional situations. As such, our study advances understanding of opportunism by shedding light on the potential differences between firms' opportunism propensity. Meanwhile, our behavioral decision approach introduces

a new perspective to examine opportunism, advancing the theoretical backdrop of opportunism research, which has been mainly dominated by transaction cost theory (Pozner, 2008).

Our findings also have important implications for entrepreneurship research. First, entrepreneurship researchers have devoted effort to exploring how entrepreneurs make decisions for their ventures to engage in ethical/unethical practices. However, the mechanisms through which entrepreneurs make decisions with particular moral implications are still unclear. In this regard, opportunism, a typical unethical practice, provides an important instance to explore the (un)ethical decision making of entrepreneurs. Our findings depict that entrepreneurs' decision to engage in unethical behaviors may be determined by their shifting reference points (Longenecker et al., 2006). That is, entrepreneurs may shift their attention across the economic and social consequences of the unethical behavior based on the most prominent or exigent issue(s) in their new ventures' operation, as well as their personal involvement in their new ventures. These findings shed light on entrepreneurial decision-making regarding unethical behaviors and highlight important directions for future research (Morgan & Sisak, 2016).

Our findings also shed light on the interplay between entrepreneurs' economic and social considerations in their decision making. Scholars have long noted the coexistence of economic and noneconomic considerations in the entrepreneurship process (Alvarez, Barney, & Anderson, 2013; Shepherd et al., 2015). However, little has been done to systematically unveil the way in which the two considerations would interplay and together shape entrepreneurs' decision making, especially when they may potentially conflict with each other. By highlighting the ways in which entrepreneurs may reconcile the conflict between the economic benefits and the social costs associated with venture opportunism, we shed light on the patterns of entrepreneurial decision in balancing the economic and social consequences in their new ventures' operation.

Limitations and Future Extensions

Our study can be advanced in following ways. First, we account for venture opportunism through the perspective of behavioral decision theory. However, other theoretical perspectives may also be valuable in understanding the decision of opportunism. For example, through the perspective of resource dependence theory, an alternative explanation of our finding could be that ventures with higher failure risk depend more on external resources and thus are more likely to secure these resources regardless of the potential costs of doing so. Likewise, according to network theory, not only firms' network using effort, but also their relational and structural features in the industrial network may play critical roles in their decision of opportunism. Future research can benefit from drawing on alternative theoretical perspectives to highlight the decision mechanism behind new ventures' opportunism.

Second, we mainly focus on the opportunism of new ventures in this study. Future research can benefit from replicating our findings with established firms and comparing them with new ventures regarding their opportunism decisions.

Third, future studies may benefit from exploring the relationship between opportunism and other decisions in venture operation. For example, as discussed above, entrepreneurs' personal network use, as a strategic decision (Peng & Luo, 2000; Venkataraman, 1997), is related to new venture opportunism. Moreover, personal network use can help entrepreneurs cope with the threat of venture failure. As such, using entrepreneurs' personal networks to deal with the threats of venture failure may reduce the necessity for ventures to behave opportunistically. Therefore, there might be a mediation path across venture failure risk, entrepreneurs' personal network using, and venture opportunism. Exploring such effect paths will provide a more thorough and complete understanding about the decision mechanisms of venture opportunism.

Lastly, our sample was from NEEQ-listed new ventures in China. A natural extension of our study would be to examine our conclusions in different industrial contexts and in different economic systems (especially in Western countries) to test the generalizability of our theory and findings. Moreover, another potential extension would be to further explore the specificity in China. For example, *guanxi*, as the China-specific social network that carries specific cultural and social implications, may shape new venture opportunism in some particular ways. Future research can benefit from deepening our conclusions in the special Chinese context.

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TABLE 1
SURVEY ITEMS AND RESULTS OF CONFIRMATORY FACTOR ANALYSIS

Construct	Item	Standardize d Loading	Cronbach 's alpha
<i>Opportunism</i>	Regarding each of your partner/former partner/firms that you are familiar with in the roster, apprise its records about following actions in economic relations:		/
Anderson, 1988 John, 1984 Luo, 2007	1. Deliberately refusing to fully unveil its real information, especially negative situations, before economic relations are launched	/	
	2. Making false promises that cannot be fulfilled with its own capability	/	
	3. Eluding its responsibilities and duties in economic relations according to contracts or agreements	/	
	4. Always unilaterally taking actions that are in its own best interests without discussing them with partners	/	
	5. Always trying to appropriate the outcome of a cooperation relationship	/	
	6. Always starting up conflicts towards the launched contracts or agreements	/	
<i>Information unverifiability</i>			.81
Jiang et al., 2009 Luo, 2007	1. To what extent do you think the information in your operation environment can be fully and publicly obtained in a timely fashion*	.81	
	2. To what extent do you think information that is publicly available in your operation environment is accurate and reliable	.73	
	3. To what extent do you think information that is publicly available in your operation environment is easy to comprehend and describe	.84	
	4. To what extent do you think information that is publicly available in your operation environment is easy to analyze and verify	.76	
<i>Institutional inefficacy</i>	In your observation over the past three years:		.74
Jiang et al., 2009 Luo, 2007	1. How complete or consummate is the business or commercial law that China has enacted that affect your business	.77	
	2. How strict and impartial has China's national judicial system (courts, tribunals and procuratorial departments) enforced the laws that affect your business	.74	
	3. How strict and impartial is China's judicial system (courts, tribunals and procuratorial departments) at the local level (province, city, and county) enforced the laws that affect your business	.79	
	4. How complete is the development of the legal service sectors that affect your business	.82	
<i>Personal network using</i>	To what extent you use your personal ties with the following stakeholders to secure resources, stabilize environments, get information, and support the survival of your firm?		/
Acquaah, 2007 Peng & Luo, 2000 Jiang et al., 2009	1. Customers	/	
	2. Suppliers	/	
	3. Competitors	/	
	4. Investors	/	

N=289 (including all sample NEEQ-listed firms)

TABLE 2
DESCRIPTIVE STATISTICS

Variable	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Opportunism	3.28	2.45	-													
Venture failure risk	2.18	1.30	0.29	-												
Personal investment	1.64	0.79	-0.14	0.41	-											
Network using	2.48	1.59	-0.38	0.25	0.02	-										
Entrepreneur age	35.16	10.29	0.36	0.02	0.02	-0.21	-									
Education	2.18	1.30	0.22	-0.16	-0.14	0.05	0.14	-								
Gender	0.32	0.20	0.03	0.00	0.03	0.02	0.01	0.07	-							
Industrial experience	4.21	0.59	0.08	-0.14	-0.09	-0.09	-0.03	-0.06	0.28	-						
Founder	0.54	0.63	0.01	-0.11	-0.08	-0.07	0.02	0.06	0.33	0.05	-					
Asset scale	2.21	1.36	-0.05	0.02	0.09	-0.04	-0.01	0.06	0.19	0.11	0.05	-				
Performance	10.43	2.15	-0.06	0.00	-0.13	0.02	0.03	0.13	0.25	0.27	0.23	0.16	-			
State ownership	0.13	0.08	0.31	0.36	-0.10	-0.01	0.20	0.01	0.07	-0.13	-0.03	0.15	0.21	-		
Location	0.41	0.36	-0.30	-0.22	0.30	-0.15	-0.10	0.13	-0.01	0.15	0.22	-0.08	-0.33	0.03	-	
Institutional inefficacy	3.72	.84	-0.46	-0.13	0.36	-0.23	-0.18	0.09	-0.02	0.08	0.43	-0.04	-0.37	-0.33	-0.09	-
Informational unverifiability	4.08	1.92	-0.34	-0.20	0.15	-0.25	-0.10	0.03	-0.12	0.05	0.10	-0.11	-0.40	-0.29	0.38	0.04

N=244

*Correlations with absolute value greater than or equal to 0.11 are significant at the 0.05 level.

TABLE 3
TWO-STAGE MODEL RESULT

	Stage 1		Stage 2							
	Model 1		Model 2		Model 3		Model 4		Model 5	
	DV: Personal network using		DV: New venture opportunism (Time 2)		DV: New venture opportunism (Time 2)		DV: New venture opportunism (Time 2)		DV: New venture opportunism (Time 2)	
Variables	b.	Robust SD	b.	Robust SD	b.	Robust SD	b.	Robust SD	b.	Robust SD
Entrepreneurial professional status	0.28**	0.11								
Entrepreneurial political status	1.55**	0.37								
New venture opportunism (Time 1)	-0.25***	0.08								
Entrepreneur age	0.12***	0.03	0.00	0.11	0.25*	0.12	0.13	0.13	0.42†	0.21
Education	0.14***	0.02	0.01	0.08	0.00	0.09	0.01	0.09	0.02	0.11
Gender	0.01	0.09	0.01	0.13	0.02	0.16	0.04	0.17	0.05	0.17
Industrial experience	0.12†	0.07	-0.12**	0.04	-0.07	0.06	0.11	0.09	0.13	0.09
Founder	0.19†	0.10	-0.01	0.29	-0.31	0.23	-0.03	0.31	-0.62	0.43
Asset scale			-0.18*	0.07	0.09	0.08	0.17†	0.09	0.22	0.16
Performance			-0.02	0.29	-0.59*	0.24	-0.04	0.34	-0.95*	0.44
State ownership			0.44**	0.15	0.45**	0.14	0.42*	0.17	0.27	0.27
Location			0.00	0.03	0.00	0.04	0.00	0.04	0.00	0.05
Institutional inefficacy			0.28*	0.11	0.25*	0.10	0.27*	0.11	0.27†	0.16
Informational unverifiability			0.08	0.07	0.04	0.06	0.09	0.07	0.01	0.09
Inverse Mills Ratio			0.40	0.63	-0.92	0.59	0.36	0.71	-1.77	1.09
New venture failure risk			1.81***	0.43	5.09***	0.71	1.76**	0.61	5.01***	1.12
Personal investment (PI)			0.04	0.18	0.07	0.22	0.02	0.26	0.12	0.43
Personal network using (PNU)			-1.49***	0.27	-0.59**	0.20	-1.64**	0.62	-1.79†	0.90
Venture failure risk*PI					1.53**	0.82			1.69*	0.75
Venture failure risk*PNU							-0.45***	0.09	-0.62***	0.17
Adjusted R ²	0.908		0.670		0.727		0.697		0.736	

N=244

†p< .10; *p< .05; **p< .01; ***p< .001

Standard errors are robust clustered by industries.

FIGURE 1
INTERACTION BETWEEN VENTURE FAILURE RISK AND ENTREPRENEURS' PERSONAL INVESTMENT

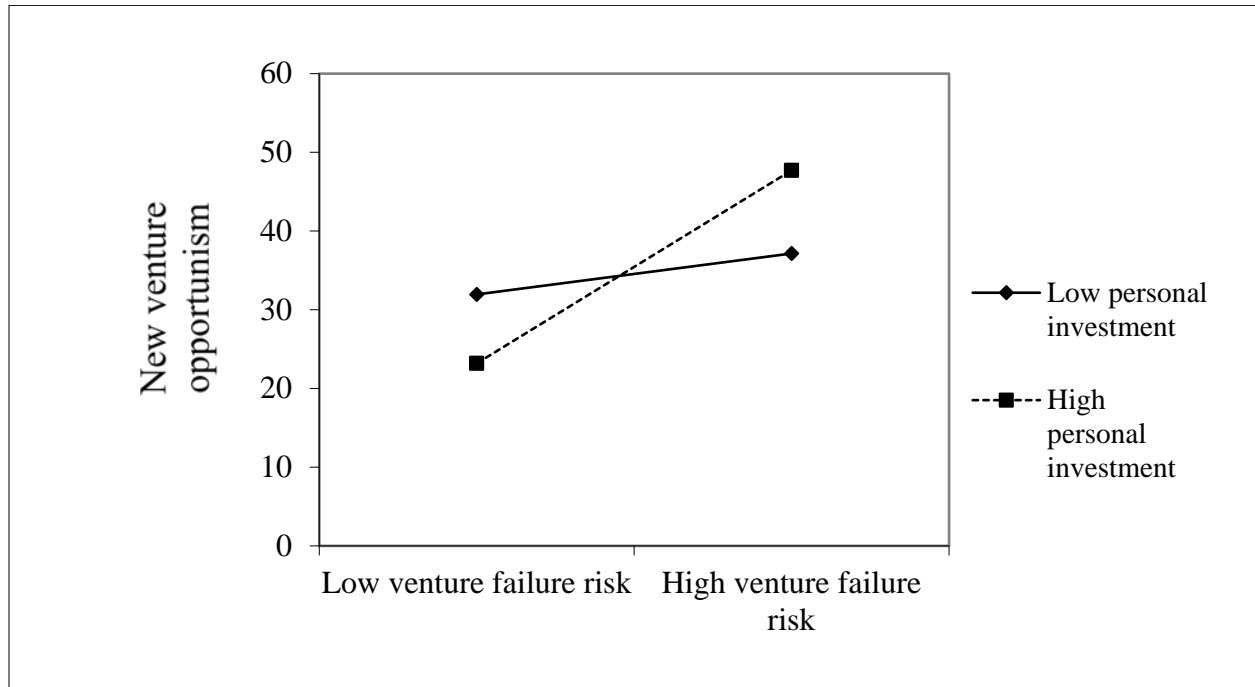
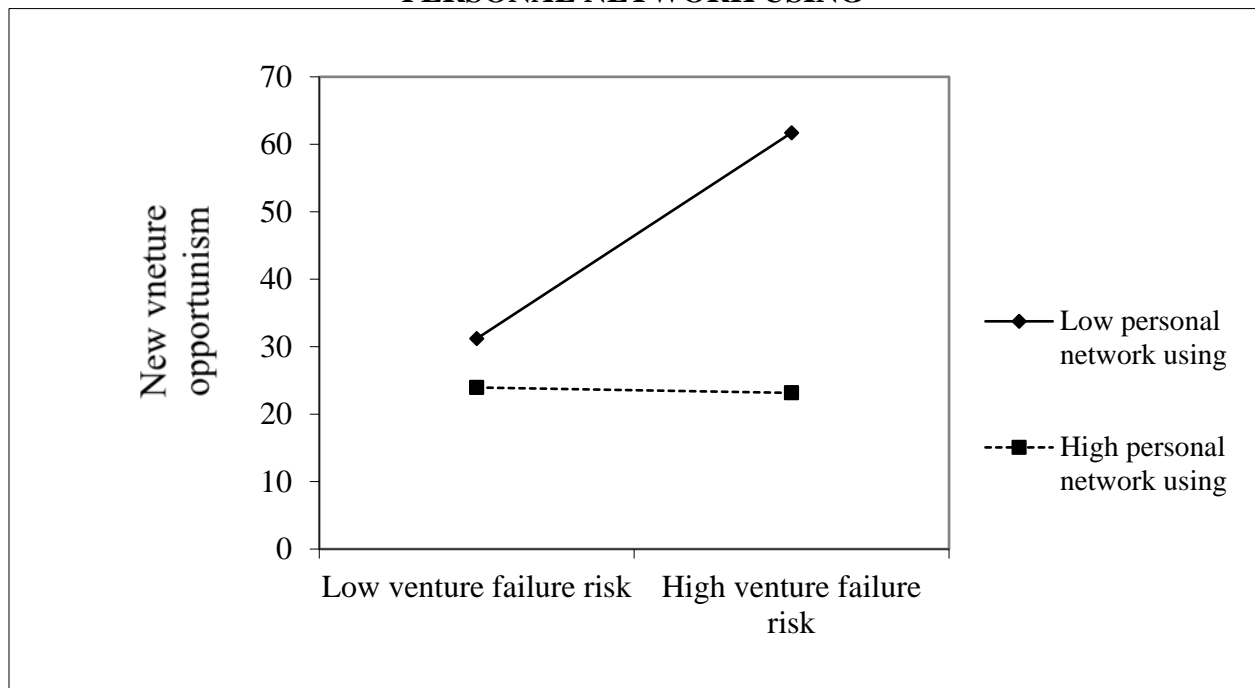
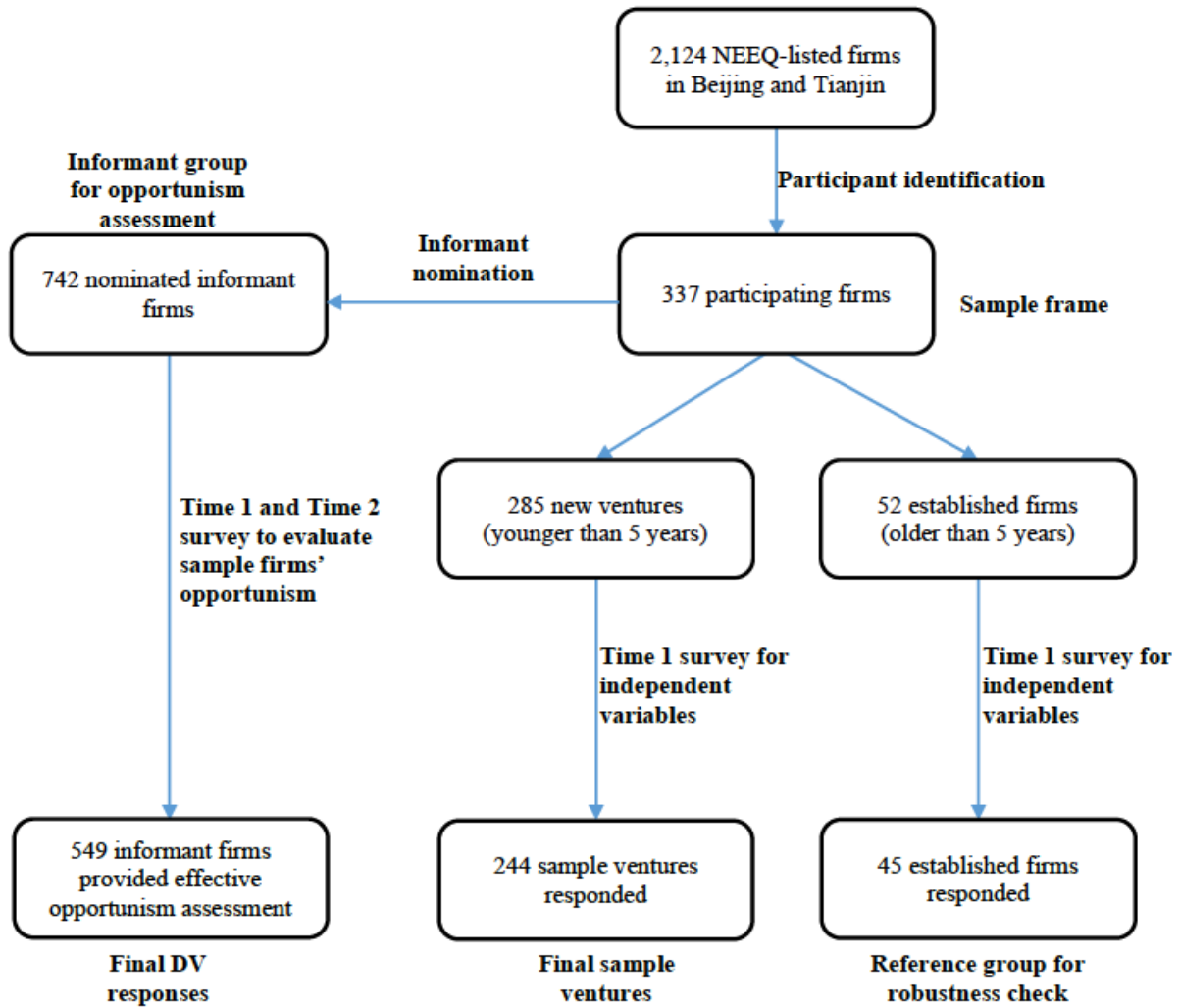


FIGURE 2
INTERACTION BETWEEN VENTURE FAILURE RISK AND ENTREPRENEURS' PERSONAL NETWORK USING



APPENDIX 1

SECONDARY DATA COLLECTION PROCESS



Note:

1. The final sample consists of 244 NEEQ-listed ventures, whose opportunism was evaluated by the 549 informant firms.