The Effects of Failure Avoidance and Self-Enhancement Motives on Entrepreneurs’ Social Networks in China

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Abstract

The extant research illustrated that social networks are crucial for entrepreneurial success. However, few studies have investigated what antecedent factors influence entrepreneurs’ social networks. In this article, we address the following question: What is the role of entrepreneurs’ motives to avoid failure and enhance self-esteem in their networking behavior and personal network structures? Conducting an experiment with 155 entrepreneurs in China, we found that both motives influence and intensify entrepreneurs’ networking behavior. A survey of 153 entrepreneurs in China showed that the motive to avoid failure is associated with social networks rich in structural holes, whereas the motive to enhance self-esteem is associated with highly dense social networks. Overall, entrepreneurs’ failure avoidance motive and self-enhancement motive lead to different structural patterns of entrepreneurs’ networks. The contributions and implications of the findings are discussed.

Keywords: Failure Avoidance, Self-Enhancement, Entrepreneurial Self-Efficacy, Network Activation, Structural Holes, Density
INTRODUCTION

Economic and entrepreneurial actions are embedded in concrete social relationships, and business transactions are often carried out between individuals and organizations connected with each other through social ties (Granovetter, 1973, 1995). The previous research illustrated that social networks have significant positive effects on entrepreneurial outcomes by facilitating entrepreneurs’ access to information, knowledge, resources, potential business partners, suppliers and buyers (Aldrich & Kim, 2007; Batjargal et al., 2013; Ostgaard & Birley, 1994; Stuart & Sorenson, 2007). Social networks influence entrepreneurs’ access to equity capital (Batjargal & Liu, 2004), venture founding and growth (Burt, 2019; Burt & Burzynska, 2017; Stam, Arzlanian, & Elfring, 2014). Therefore, it is especially important to investigate what factors influence entrepreneurs’ networking behavior and network structure.

Previous research on the antecedents of network structure of entrepreneurs has focused on the capability and personality of entrepreneurs. For example, social competency and skills help entrepreneurs build personal credibility and venture legitimacy (Baron & Markman, 2003; Zott & Huy, 2007). In particular, entrepreneurs’ networking style influences their initiation of new exchange ties (Vissa, 2012), and their ability to identify and highlight similarities facilitates the conversion of new ties to fruitful economic exchanges (Batjargal, 2010a; Phillips, Tracey, & Karra, 2013). Further, the personality of entrepreneurs, such as self-monitoring (the tendency to align one’s affect and behavior according to social contexts rather than one’s inner attitude), significantly affects the structure of their social networks (Oh & Kilduff, 2008). However, capability and personality are generally stable and hard to change, yet social networks are dynamic, and evolve as new ventures develop (Aldrich & Kim, 2007; Vissa, 2011). Therefore, more research is needed to examine how entrepreneurs adjust their networking behavior and
network structure dynamically (Landis, 2016).

Psychological literature on dynamic cognitive model of network activation investigated
how social networks are perceived and activated in people’s cognition. For instance, Simpson,
Markovsky, and Steketee (2011) found that high power leads to less accurate perception of social
networks. Smith, Menon, and Thompson (2012) found that facing job threats, people with lower
status activate smaller and tighter networks, whereas people with higher status activate larger and
less constrained networks. Menon and Smith (2014) suggest that the fit between people’s power
and status level confirms their identity and enables them to broaden their social networks. Shea,
Menon, Smith, and Emich (2015) found that experiencing positive affect leads people to activate
larger and sparser social networks, whereas experiencing negative affect leads people to activate
smaller and redundant social networks. Most recently, Shea and Fitzsimons (2016) found that
individual advancement goals activate sparser networks and lead to more central positions in
social networks than affiliation goals. These findings suggest that individuals’ motives may
influence whom they choose to seek information and advice from, changing the structure of their
social networks. However, these studies were mainly conducted in the laboratory settings with
students rather than in the real entrepreneurial setting.

In this article, we focus on two psychological motives that are especially prevalent among
entrepreneurs—the motives to avoid failure and enhance self-esteem and examine how these
motives influence their networking behavior and personal network structures. We hypothesize
that individuals’ motive to avoid failure will posture them to build social networks rich in
structural hole defined as the absence of a link between two contacts who are both linked to an
actor (Burt, 1992). Likewise, we propose that the motive to feel good about oneself, i.e., the
need for self-enhancement will incline entrepreneurs to build highly dense and interconnected
networks. Therefore, we propose that different psychological motives of entrepreneurs will lead to different networking behavior and different network structures.

In this article, we examine these two proposals with two studies. Study 1 is an experiment with 155 entrepreneurs in China conducted to establish the causal effects of motives on networking behavior. Study 2 is a survey of 153 entrepreneurs in China carried out to examine the effects of entrepreneurs’ motives on their network structures. We claim to make the following contributions to the research literature. First, we found that different psychological motives lead to different networking behavior and structures. This is a relatively new theoretical contribution to the psychological literature on human motives. Second, we identify and examine how the psychological motives of entrepreneurs influence their networking behavior and network structures. This is a contribution to the entrepreneurship literature. Third, we explore how entrepreneurs’ networks vary with their salient psychological motives and highlights the dynamic nature of social network.

THEORY AND HYPOTHESES

Social capital has been widely viewed as a major factor for entrepreneurial success and has significant effects on venture growth (Stam et al., 2014). For startup companies, entrepreneurs’ personal networks are very important to integrate all kinds of resources to establish and develop further new ventures. The founder-manager’s personal networks are the greatest critical resource, as it can be utilized for the development of new venture at the startup stage. As Ostgaard and Birley (1994) explained, the theory of social networks focuses on how entrepreneurs/managers of a firm use individual networks to access essential external resources. It is often the personal networks of founders are the networks on which new ventures rely on for resource acquisition and subsequent growth (Johannissson, 1998, 2000; Hite & Hesterly, 2001;
Lechner, Dowling, & Welpe, 2006; Zhao & Aram, 1995). Therefore, we focus on entrepreneurs’ ego networks in this study.

In this paper, we investigate two motives that may influence entrepreneurs’ networking behavior—to avoid failure and to enhance self-esteem. We propose that social networks rich in structural holes can provide non-redundant information and resources (Burt, 1992), and thus is especially able to tap the failure avoidance motive. Dense networks composed of strongly interconnected ties, are especially useful for satisfying self-enhancement motive. Therefore, we hypothesize that individuals’ motives to avoid failure will incline them to build social networks rich in structural holes. Individuals’ need for self-enhancement will predispose them to build highly interconnected dense networks. In the following sections, we will introduce the two motives and develop the hypotheses separately.

**Failure Avoidance Motive and Social Networks**

The development of social networks consumes individual resources, such as time and monetary resources. According to the resource allocation perspective, individuals allocate their resources according to their perceived demand from the environment (Bledow, 2013). When information regarding how well one satisfies environmental demand is absent, people use their self-feelings, such as self-efficacy, as a signal of how well they are performing a specific activity (Schmidt & DeShon, 2010). The resource allocation perspective suggests that self-efficacy plays a central role in guiding individuals to allocate resources to different activities (Vancouver & Kendall, 2006; Vancouver, More, & Yoder, 2008). In the entrepreneurship field, entrepreneurial self-efficacy denotes entrepreneurs’ belief about their capability to perform a series of entrepreneurial activities (Chen, Greene, & Crick, 1998). When people’s self-efficacy about a specific activity is high, they assume that they are meeting environmental demand about that
activity and should devote resources to other activities (Beck & Schmidt, 2018).

Since entrepreneurs have to manage the demands from multiple activities of their new ventures, such as product development, market validation, finance, and human resources, their self-efficacy about their business environment may lead them to feel confident about their ability to meet environment demands and reduce resources for searching of diverse information and develop networks. Indeed, previous research has found that confidence leads to less information search (Cooper, Folta, & Woo, 1995), and too much confidence of entrepreneurs has a negative effect on new venture performance (Hmieleski & Baron, 2009). Therefore, when entrepreneurs feel good about themselves or confident about their business success, they may perceive less need to develop their network. When entrepreneurs feel bad or lack confidence, it provides a signal that they are not performing according to their expectation or environment standard. Then they will devote limited resources to acquire information and build their networks. Therefore, we hypothesize that:

**Hypothesis 1a. Under the motive to avoid failure, entrepreneurs are more likely to network when they feel bad about themselves.**

Previous research has extensively documented the importance of structural holes for entrepreneurial success. Burt (1995) defined the gap existing between unconnected clusters of contacts in a network as structural hole. He suggests that players who connect the otherwise unconnected contacts (filling the structural hole) can have better access to non-redundant information and control the information, because each cluster of connected players share similar information. Because unconnected clusters potentially possess non-redundant information, the network that has a lot of structural holes improves entrepreneur’s potential for opportunity identification (Stuart & Sorenson, 2007). Once the entrepreneurs identify the opportunities and
assemble all accessible information within the networks, the entrepreneurs might be recognized by potential investors through their networks (Sorenson & Stuart, 2001). Therefore, the brokerage position of an entrepreneur in the network forms the foundation for resource access (Stuart & Sorenson, 2007). A study with a large number of bankers and managers in six western organizations illustrates that the network brokers are able to obtain greater achievement (Burt, Kilduff, & Tasselli, 2013). Brokerage (filling structural holes) has been consistently demonstrated to enhance entrepreneurial outcomes in both Western countries and Eastern countries, such as China (Batjargal, 2007a, b, 2010b; Batjargal et al., 2013; Burt & Burzynska, 2017). Therefore, social networks that are rich in structural holes is especially beneficial for the survival and growth of new ventures.

Under the motive to avoid failure, entrepreneurs will be especially motivated to increase the structural holes in their social networks, i.e., to broke among strangers. According to the resource allocation perspective, low confidence signals to entrepreneurs that they may face the risk of failure. Therefore, entrepreneurs under low confidence may be more likely to take actions to build connections with diverse information and resources, in order to secure their survival. Furthermore, the brokerage among structural holes may also require more resource investment because contacts between structural holes do not know each other. Thus, entrepreneurs need to spend more time and effort to identify people with few connections to their existing contacts. Given the limited resources of startup companies and multiple demands upon the entrepreneurs, they may only spare their limited resources to develop such networks when necessary, that is, when they face failure threat and do not hold high confidence in their chance of success.

**Hypothesis 1b.** *Under the motive to avoid failure, entrepreneurs are more likely to develop social networks rich in structural holes when they feel bad about themselves.*
Self-Enhancement Motive and Social Networks

Besides the motive to avoid failure, we propose another important motive underlying social network—the motive to feel good about oneself. Self-esteem is one’s overall evaluation of one’s worth and general feeling about oneself (Rosenberg, Schooler, Schoenbach, & Rosenberg, 1995). The motive to increase one’s self-esteem is an important motive underlying organizational behavior (Pfeffer & Fong, 2005). Previous research suggests that the motive to feel good about oneself and the motive to reduce uncertainty jointly influence individuals’ information seeking behavior (Hays & Williams, 2011). Since social networks are important ways to seek information and social support, we argue that the motive to enhance one’s self-esteem should also influence entrepreneurs’ social networks.

Social relationships, especially close relationships, are important resources to boost one’s self-esteem which is defined as a measure of one’s social worth. It increases as one develops more social relationships (Leary, Tambor, Terdal, & Downs, 1995). Others’ appraisal has significant impact on one’s state self-esteem, which demonstrates exponential increase with more positive appraisal (Leary, Haupt, Strausser, & Chokel, 1998). Therefore, association with others, especially those holding positive appraisal about one’s worth, is an important way to enhance one’s self-esteem. Previous research has demonstrated that resorting to close social relationships is an important way to affirm one’s self-worth and deals with ego threat for individuals (Sherman & Cohen, 2006). Therefore, we propose that the motive to enhance one’s self-esteem will intensify one’s networking behavior.

In this paper, we propose that individuals’ motive to enhance self-esteem will lead to more intense networking behavior when they feel good about themselves. The entrepreneurial role is a central and salient identity of entrepreneurs (Cardon, Wincent, Singh, & Drnovsek,
The salient entrepreneurial identity is an important source of entrepreneurial passion (Cardon et al., 2009). Entrepreneurs tend to attribute their business outcomes to themselves (Brandstätter, 1997) and want to see themselves as distinctive (Shepherd & Haynie, 2009). Under the motive to enhance one’s self-esteem, entrepreneurs will seek to confirm their self-worth by networking when they feel good about themselves.

**Hypothesis 2a.** Under the motive to enhance self-esteem, entrepreneurs are more likely to network when they feel good about themselves.

Previous research suggests that dense networks with strong ties can enhance the self-esteem of individuals. Tie strength denotes the closeness between two players connected through the tie (Hoang & Antoncic, 2003; Lechner et al., 2006). Different ties may generate different benefits. Weak ties can bring diverse information and promote opportunity identification (Elfring & Hulsink, 2003). Strong ties offer emotional support to help entrepreneur take calculated risks in business (Brüderl & Preisendörfer, 1998), and entrepreneurs can be then encouraged to take a persistent attitude in business as a result (Gimeno, Folta, Cooper, & Woo, 1997). The networks comprised mostly of strong ties are regarded high-density networks, while low-density networks are composed of ties that are not connected or weakly connected to each other (Dubini & Aldrich, 1991). Therefore, highly dense networks provide comfort and social support, which can enhance the self-esteem of entrepreneurs. Therefore, we hypothesize that:

**Hypothesis 2b.** Under the motive to enhance self-esteem, entrepreneurs are more likely to develop dense networks when they feel good about themselves.

In summary, we propose that under the motive to avoid failure, entrepreneurs are more likely to develop networks rich in structural holes when they feel bad about themselves. On the contrary, under the self-enhancement motive, they are more likely to develop dense and
interconnected networks, when they feel good about themselves. Taken together, self-evaluations and motives interact to influence entrepreneurs’ network behavior and structure.

**Study 1 Experiment**

In Study 1, we conducted an experiment to establish the causal effect of motives on entrepreneurs’ networking behavior (testing H1a and H2a). We manipulated participants’ motives to avoid failure and enhance self-esteem and measured their likelihood of networking with different types of relationships. Following the example of previous research (Kollmann, Stöckmann, & Kensbock, 2017), we manipulated their motive to avoid failure by making failure information salient. Threat to one’s important identities constitute ego threat, which requires individuals to defend their self-worth. To manipulate their self-enhancement motive, we adopted the widely accepted self-affirmation paradigm in social psychology (Sherman & Cohen, 2006). After self-affirmation, individuals are supposed to feel good about themselves and less more likely to react defensively to ego threat.

**Sample and Procedure**

We recruited 155 entrepreneurs in Ningbo China to participate in the experiment. We visited them in the incubators and invited them to complete the experiment online. Participants who completed the whole study received RMB20 (the Chinese currency) as compensation. The final sample was composed of 51% female and had an average age of 26.15 years. In terms of education, 63.9% earned BA degree, 14.2% - Master’s degrees, and 1.9% - doctoral degree. Their firms were from more than ten different industries, including 4.2% from manufacturing, 6.7% from transportation and communication, 9.2% from finance, and 14.3% from service industries.

In the experiment, we adopted a 2 (failure threat: no vs. yes)*2 (self-affirmation: no vs.
yes) design. Participants were randomly assigned to one of the four conditions. Under the failure threat condition, participants were told that research shows that the failure rate of new business in China is around 80%. As the founder of their company, they were required to write down three reasons that may lead to the failure of their company. Under self-affirmation condition, participants wrote about three things that make them feel proud about themselves. In the control condition (no failure threat, no self-affirmation), participants wrote about what they ate in the past 48 hours. After the manipulations, participants were given a set of potential candidates to ask for advice, with varying likelihood of giving positive feedback. We measured their tendency to associate with different candidates.

Measures

Manipulation checks. We used fear of failure to measure the effect of failure threat manipulation. Fear of failure was measured by asking participants to indicate the extent to which they were afraid of failure in their own business at that moment along a continuous bar (from 0 to 5). We used state self-esteem scale to measure the effect of self-affirmation manipulation. It was adapted from the Rosenberg Self-Esteem scale (1965) by adding the term “right now” to each item. Exemplar items included “right now I am satisfied with myself” (1-“strongly disagree”, 5-“strongly agree”; α = .74).

We measured networking behavior by the likelihood (from 0 to 100%) of choosing to network with different types of contacts, who differed in the value of information and favorability of feedback provided. We adopted the established measures of information source used in previous research, with different likelihood of giving positive feedback (Kaish & Gilad, 1991). The likelihood that each source would give positive feedback was specified in parentheses to establish consistent expectations about the favorability of each source among participants. The
nine sources included: (1) customers/clients (1%); (2) bankers (10%); (3) accountant, bookkeeper (20%); (4) other business owners (30%); (5) subordinates (60%); (6) lawyers, attorneys (70%); (7) suppliers (80%); (8) personal friends (90%); (9) family members or relatives (99%). The order of different sources was randomized in the experiment. Since the likelihood of networking had a high reliability ($\alpha = .88$), we treated different levels of favorability as one factor and did not conduct separate analyses for different relationships.

Results

The failure threat manipulation significantly increased participants’ fear of failure ($t (123) = 2.41, p = .017$). However, the self-affirmation manipulation did not significantly increase participants’ state self-esteem ($t (138) = .18, p = .86$). A review of previous research has showed that self-affirmation manipulation may not always influence self-esteem because of its stability, yet it does not obviate its intended effect on behavioral outcomes (McQueen & Klein, 2006).

Because the dependent variable—likelihood of networking—was repeatedly measured within subjects, we adopted repeated-measures test in general linear model to analyze the data. Favorability of feedback was the within-person factor with nine levels, and failure threat and self-affirmation were fixed factors. The full model results showed that favorability has a significant effect on likelihood of networking ($\chi^2 (54) = 175.25, p < .001$). The interaction effect of failure threat and self-affirmation was also significant ($F (1, 127) = 3.77, p = .05$). The pattern of interaction effect was displayed in Figure 1. We also conducted mixed model analysis to further investigate the interaction effect, which was also significant ($F (1, 1418) = 17.07, p < .001$). Simple slope analysis found that after failure threat, participants were more likely to network when their self-worth was not affirmed ($b = -6.72, t= -3.70, p <.001$). That is, faced with failure threat, when entrepreneurs lack confidence to combat the threat, they resort to network to
avoid failure, which provides support for Hypothesis 1a. In other words, self-affirmation reduces the need to defend one’s self-worth through resorting to social networks. Under no failure threat, participants were more likely to network when their self-worth was affirmed (b = 3.85, t = 2.14, p = .03). It suggests that when individuals feel good about themselves, they are more likely to network than when they feel bad about themselves, supporting Hypothesis 2a.

**STUDY 2 Field Survey**

We further conducted a field survey with entrepreneurs to test our hypotheses on network structure (H2a and H2b). In the field survey with entrepreneurs, we measured their entrepreneurial self-efficacy, as an index of their confidence about their new ventures, and contingent self-worth, as a measure of their motives. According to contingency of self-worth theory (Crocker & Wolfe, 2001), individuals differ in the domain on which they base their self-worth, and such domain is called contingency of self-worth. When individuals’ self-worth is contingent on a domain, they only feel good about themselves when they perform well in that domain, and they feel worthless as a person when they fail in that domain (Crocker & Wolfe, 2001). Therefore, individuals are motivated to avoid failure and enhance self-esteem in their contingency of self-worth (Crocker & Park, 2004). It is important to note that contingency of self-worth is different from self-esteem. Contingency of self-worth is the domain to which self-enhancement motive is targeted and realized, whereas self-esteem is the level of individuals’ feeling about themselves and the outcome of self-enhancement efforts.

A salient contingency of self-worth for entrepreneurs is their enterprises’ performance. When entrepreneurs’ self-worth is contingent on their new ventures, the feedback about their products and services may impact how entrepreneurs feel about themselves. Thus, they are driven to both avoid failure in their ventures and enhance their self-esteem through performing
well. Based on previous research (Chen, 2014), we suggest that entrepreneurial self-efficacy and contingent self-esteem will interact to influence the structural hole and density of entrepreneurs’ social network. When entrepreneurs’ self-worth is contingent on their venture performance, low self-efficacy will activate the motive to avoid failure and increase the structural hole in their social network. High self-efficacy will activate the motive to enhance their self-esteem and lead them to resort to dense network to enhance their self-esteem. In the survey, we will test these hypotheses by measuring the structural hole and density of entrepreneurs’ social network.

Sample and Procedure

To test our hypotheses, we surveyed 153 nascent entrepreneurs from various incubators located in Ningbo, China. The average age of the startups was 3.29 years, and average age of the founders was 34 years. The sample consisted of 23% female. With regard to educational level, 67.1% of the whole sample held bachelor degrees, and 24.3% had postgraduate degrees. The companies covered all kinds of industries, including 20.3% in trade, 17% in service, and 27.5% in Information Technologies.

We approached the entrepreneurs under the help of incubators. We distributed the survey at the incubators. We asked the founder of each company to fill the measures of his/her own entrepreneurial self-efficacy and contingent self-esteem. We asked participants who they have contacted for business advice in the past six months, what was their relationship with these contacts, and what was the relationship between different contacts. Based on the responses, we calculated structural hole and density following previous procedures. Having different formats to measure the predictors and outcome variables alleviates the concern of common method bias (Podsakoff, MacKenzie, Jeong-Yeon, & Podsakoff, 2003).

Measures
Entrepreneurial self-efficacy was measured by an established scale (Zhao, Seibert, & Hills, 2005), which asked participants to indicate the degree of certainty they feel in performing four entrepreneurial tasks, such as generating creative ideas and commercializing their ideas and new development (1=completely unsure, 5=completely sure, \( \alpha = .82 \)).

We adapted the measure of contingent self-worth from the previous scale on workplace contingent self-worth to the entrepreneurial setting (Ferris, Brown, Lian, & Keeping, 2009). The five items were “My opinion about myself is tied to how well my new venture works”; “My new venture’s success gives me a sense of self-respect”; “I feel better about myself when I know my new venture is doing well”; “My self-esteem is influenced by my new venture’s performance”; “I feel bad about myself whenever my new venture’s performance is lacking” (1=“strongly disagree”, 7=“strongly agree”, \( \alpha = .81 \)).

Social network was measured by an established scale of ego network of entrepreneurs (Burt, 1992). Since our study was about the effects of psychological motives on social network, we focused on advice network, which is more amenable to the impact of psychological motives and less concerned with resource situations. We used the name generator method (Burt, 1992; Marsden, 1990) to obtain data on entrepreneur’s personal (egocentric) networks. We employed the name generator method because it enables us to measure structural properties of networks (i.e., density and structural holes) more thoroughly while being less likely to suffer from social desirability bias than other methods, including the position generator method. Each respondent was asked to provide the first names or the surnames of up to five individuals in his or her network from whom he or she obtained advice (e.g., information and suggestions) in the last six months. For each contact, respondents also answered: “how close do you feel to this person” as “very close,” “close,” “neither close not distant,” or “distant.” Similarly, the respondent reported
his/her perception of the relationship between two pairs of contacts as “close,” “neither close nor distant,” or “distant.” “Distant” was defined as “two individuals rarely work together, are strangers, or do not enjoy each other’s company.” We used Burt’s (1992) measure of network constraint to capture structural holes:

$$C_i = \left( p_{ij} + \sum_{q=1}^{W} P_{iq} P_{jq} \right)^2, q \neq i, j$$

$$C_i = \left( p_{ij} + \sum_{q=1}^{W} P_{iq} P_{jq} \right)^2, q = i, j$$

where $p_{ij} P_{ij}$ is the proportion of total relational strength that $i$ directly allocates to $j$, $P_{iq} P_{jq}$ is the proportion of total relational strength that $i$ devotes to $q$, and $p_{ij} P_{ij}$ is the proportion of total relational strength that contact $j$ devotes to contact $q$. We used UCINET 6 software to calculate the network constraint score. **Structural Holes** is measured as 1 minus the network constraint score, with larger scores denoting more structural holes.

**Network density** measures the extent to which contacts (alters) are connected to each other (Marsden, 1990). This variable is calculated by dividing the total number of identified relationships between the alters by the total possible number of ties, which for an undirected graph is:

$$\frac{\sum_{i=1}^{N} \sum_{j=1}^{N} a_{ij} \sum_{i=1}^{N} \sum_{j=1}^{N} a_{ij}}{N(N-1)}$$

where $a_{ij}$ is 1 indicating the existence of a close relationship between $i$ and $j$, 0.5 indicating the existence of neither close nor distant relationship, and 0 indicating the absence of relationship, and $N$ is the number of contacts (alters).

**Control variables.** We control for **firm age**, measured as years since the date of founding, and **firm size**, measured as the number of full-time employees. We control for demographic attributes and human capital of the entrepreneurs. **Entrepreneur’s age** is measured in years, and **Entrepreneur’s education** is measured as 1 when the entrepreneur’s education is less than middle
school, 2 when the entrepreneur has completed high school, 3 for an undergraduate degree, and 4 for postgraduate degrees. We control for Entrepreneur’s gender using a dummy variable (Woman=1). Entrepreneur’s managerial experience is the number of years the entrepreneur worked as a manager before starting the new venture. We controlled for network size which was correlated with structural holes. Network size is the sum of the number of contacts named in the network.

Results

The descriptive analysis results are presented in Table 1. In order to test our hypotheses about the interaction effects of self-efficacy and contingency of self-worth on network density and structural hole, we conducted regression analyses on these variables separately. We standardized self-efficacy and contingent self-worth and calculated their interaction term. The results on structural hole is presented in Table 2. In Error! Reference source not found., after controlling for demographic variables, self-efficacy and CSW had a significant interaction effect on structural hole. We plotted the simple slopes in Figure 2. Simple slope test shows that self-efficacy had a negative effect on structural hole when entrepreneurs’ contingent self-worth was high (b = -.03, t = -4.27, p < .001). This effect became non-significant when contingent self-worth was low (b = .02, t = 1.43, p = .15), supporting hypothesis 1b.

Next, we tested our hypotheses on the density of social network. The results of regression analysis are presented in Table 2. In Table 2, after controlling for the demographic variables, contingent self-worth had a significant and negative relationship with network density. In addition, the interaction effect of contingent self-worth and self-efficacy was significant. We plotted the interaction effect in Figure 3. Self-efficacy had a significant and positive effect on density at when contingent self-worth was high (b = .07, t = 2.52, p = .013). The effect of self-
efficacy was non-significant when contingent self-worth was low (b = -.05, t = -1.26, p = .21). Hypothesis 2b was supported.

GENERAL DISCUSSION

In this paper, we investigate how entrepreneurs’ psychological motives influence their network behavior and structure. In the experiment study, we found that when there was no failure threat, they network more after self-affirmation. After failure threat, they are more likely to network when their self was not affirmed. In the survey study, we found that when entrepreneurs’ self-worth is contingent on their venture performance, they are more likely to develop network with structural hole as their entrepreneurial self-efficacy decreases. Moreover, they are more likely to develop dense network as their self-efficacy increases. Taken together, when individuals’ motivation to avoid failure is activated, they are more likely to network and seek non-redundant information under low confidence. When individuals’ motive to enhance self-esteem is activated, they are more likely to network and seek close relationship under high confidence. These findings make important theoretical contributions to previous literature.

First of all, this paper contributes to a better understanding of the development of social network. Although connecting with previously unconnected people is more beneficial for entrepreneurial success, research on the process of network development shows that people do not necessarily develop network with structural holes. Instead, people naturally tend to form connections with those already connected with each other. Studies on the development process of social network found that entrepreneurs tend to develop ties with similar others (Aldrich & Kim, 2007; Vissa, 2011), although this tendency can be mitigated by perceived requirement of their business (Hanna & Walsh, 2008). As their relationship develops, the originally instrumental ties tend to overlay with personal affect and create common ties shared between the two parties in the
relationship (Hite, 2005; Jack, Moult, Anderson, & Dodd, 2010). Thus, when entrepreneurs
develop new ties, they tend to rely on existing ties for referrals, which embed them in redundant
network and constrain their potential for useful economic exchanges (Vissa, 2012). This paper
suggests that the motive to enhance self-esteem is the primary reason of why entrepreneurs seek
to network with familiar others. Only when entrepreneurs are motivated to avoid the threat of
failure, are they more likely to build brokerage in their network.

Secondly, this paper highlights the dynamic nature of network development. Previous
research has mainly focused on the effects of personality on network structure, assuming that
different people develop different types of social network. For instance, prior research find that
personality of managers influences network positions (centrality) and structures (Fang et al.,
2015; Kilduff & Day, 1994; Mehra, Kilduff, & Brass, 2001). This paper shows that the contacts
that entrepreneurs approach for advice vary with their motives and confidence. Under the motive
to avoid failure, entrepreneurs approach people with non-redundant information in order to
increase their chances of survival. Under the motive to enhance self-esteem, entrepreneurs
approach their close contacts to feel good about themselves. Therefore, the network structure of
entrepreneurs changes with the fluctuation in their motives and confidence, rather than as stable
as assumed in previous literature. Therefore, entrepreneurs dynamically develop and utilize their
social network, which provides different information and resources to cater to their salient needs
and motives in a particular situation.

Thirdly, we contribute to psychological literature on network activation. Previous
research has found that psychological factors influence network structure activated in
individuals’ cognition. This paper suggests another set of important motives underlying social
network of individuals, i.e., their failure avoidance and self-enhancement motives. Furthermore,
this paper shows the effect of these motives on the actual network structure that is enacted by entrepreneurs. This paper also reveals that entrepreneurs may react to these motives in a different way from ordinary people. Previous research has basically suggest that positive feeling (such as positive affect and high status) leads to larger and sparser network, whereas negative feeling (such as negative affect and low status) leads to smaller and denser network (Shea et al., 2015; Smith et al., 2012). The findings among entrepreneurs seem to suggest an opposite pattern. When entrepreneurs feel good about themselves, they resort more to dense network to enhance their self-esteem. When entrepreneurs face failure threat, they develop social network with more structural holes to utilize diverse information. Therefore, this paper suggests the necessity to revisit the effect of psychological motives on network activation among entrepreneurs. Entrepreneurs generally have high confidence, and thus, results obtained among ordinary people may not apply to this unique population (Baron, Franklin, & Hmieleski, 2016).

**Practical Implications**

The findings also hold important implications for entrepreneurs and entrepreneurship education. Although social network with structural holes is especially important for entrepreneurial success, we found that entrepreneurs do not necessarily develop this type of network. Therefore, entrepreneurship education should emphasize the importance of structural hole in social network for the acquisition of non-redundant information and resources. Furthermore, we found that entrepreneurs only develop this type of network when their self-worth is contingent on venture performance and they have low confidence. Therefore, entrepreneurs and educators should question the source of confidence held by entrepreneurs, enabling them to shy away from the casualty of overconfidence and develop informative network. In addition, educators should emphasize the high chance of failure among new
ventures, in order to activate the failure avoidance motive of entrepreneurs. Such motive is also necessary for entrepreneurs to devote limited resources to build effective network.

**Limitations and Future Research**

There are some limitations of the studies, which await future research to address. First, the experiment study focused on general networking behavior and did not measure the structure of participants’ social networks. Future research can utilize the network activation paradigm and measure which part of networks was activated after manipulations. Second, since experimental study established the causal relationship between motives and network behavior, the survey study was cross-sectional. This design limits our ability to make causal argument about the relationship between psychological motives and network structure. Future research should adopt a longitudinal design in order observe how these motives influence the change in social network of entrepreneurs. Finally, these studies were carried out in China, which may limit the generalizability of the findings. However, since social network is especially important in countries with relatively weak legal institutions (Batjargal et al., 2013), it provides a conservative test of our hypotheses. That is, the general importance of social networks should weaken the effects of psychological motives. Given that we found the hypothesized effects in this context, it increases the credibility of the findings. Nevertheless, future research should replicate the studies in other cultures, in order to examine the generalizability of the findings.

This study found that psychological motives (failure avoidance and enhance of self-esteem) moderate both positively and negatively the effects of contingent self-worth of entrepreneurs on networking behavior and network structures (structural holes versus density). Thus, this study established boundaries of contingent self-worth in entrepreneurial network context. The article makes a contribution to the literature on personal motives, self-worth
research and social network literature.
<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
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<td>0.01</td>
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<td>.27**</td>
<td>.25**</td>
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<td>Entrepreneur managerial experience</td>
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<td>0.04</td>
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<td>0.09</td>
<td>0.07</td>
<td>0.11</td>
<td>.17*</td>
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Table 1 Means, Standard deviations, and Correlations of variables (N=155)
Table 2. Linear Regression Analysis of Structural Holes and Network Density (N=155)

<table>
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<th>Predictors</th>
<th>Network Structural holes</th>
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<td>Model 4</td>
<td>Model 5</td>
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<td>0.00</td>
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<tr>
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<td>-0.04</td>
<td>-0.04</td>
<td>0.07</td>
<td>0.07</td>
<td>0.08</td>
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<tr>
<td>Entrepreneur gender</td>
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<td>-0.04</td>
<td>-0.04</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>Entrepreneur age</td>
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<td>-0.05</td>
<td>-0.07</td>
<td>0.10</td>
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<td>0.12</td>
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<tr>
<td>Entrepreneur managerial experience</td>
<td>0.07</td>
<td>0.08</td>
<td>0.08</td>
<td>-0.10</td>
<td>-0.11</td>
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<tr>
<td>Entrepreneur education</td>
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<td>0.03</td>
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<td>-0.02</td>
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<tr>
<td>Network size</td>
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<td>0.57***</td>
<td>0.56***</td>
<td>-0.16†</td>
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<td>CSW*self-efficacy</td>
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<td>-0.16*</td>
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</table>

R square 0.33 0.36 0.38 0.04 0.08 0.11
R square change 0.02† 0.02* 0.04† 0.03*

Note: †p<0.1; *p<0.05; **p<0.01; ***p<0.001.
Figure 1 The interaction of failure threat and self-affirmation on likelihood of networking
Figure 2 The interaction effect of self-efficacy and CSW on structural hole
Figure 3 The interaction effect of self-efficacy and CSW on network density
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