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**Passion Isn't Always a Good Thing: Examining Entrepreneurs' Network Centrality and
Financial Performance with a Dualistic Model of Passion**

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Abstract

We propose a conceptual model that links entrepreneurs' passion, network centrality, and financial performance, and test this model with small business managers in formal business networking groups. Drawing on the dualistic model of passion, we explore the relationships that harmonious and obsessive passion have with financial performance, mediated by network centrality. Results indicated that harmoniously passionate entrepreneurs had higher out-degree centrality in their networking group (i.e., they were more inclined to seek out members to discuss work issues), which increased the income they received from peer referrals and, ultimately, business income. Obsessively passionate entrepreneurs had lower in-degree centrality (i.e., they were less likely to be approached by peers), and in turn received less income from referrals and less business income. These findings highlight that entrepreneurial passion does not always result in positive financial outcomes – the type of passion makes a difference. Implications for research and practice are discussed.

Keywords: business networking groups; entrepreneurial performance; harmonious passion; network centrality; obsessive passion

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Introduction

“I don't think it's all about money. If it were all about money, I wouldn't be doing what I'm doing. I think it's all about passion. I think passion drives profits, whether you're running a business of your own, or you're in a corporation.”

- Gail Blanke, Founder of Lifedesigns, quoted by Byron (2004)

Increasing attention from practitioners and researchers has focused on the role of passion in the entrepreneurial process of discovering and exploiting profitable opportunities, as well as in shaping entrepreneurial intentions and actual performance (e.g., Byron, 2004; Locke, 2000; Shane and Venkataraman, 2000). Theoretical advancements in this area have argued that passion for one's entrepreneurial work fosters greater persistence, effort, enthusiasm, and overall success (e.g., Baron, 2008; Bird, 1989; Cardon, Wincent, Singh and Drnovsek, 2009; Shane, Locke and Collins, 2003; Smilor, 1997). Empirical findings, while somewhat limited compared to the body of conceptual works, demonstrate that entrepreneurs who are passionate about their work enjoy greater venture growth (Baum and Locke, 2004; Baum, Locke and Smith, 2001), and those who are perceived by investors as being passionate and prepared are more likely to receive funding for their business plans (Chen, Yao and Kotha, 2009).

These works portray entrepreneurial passion as a valuable characteristic that will unequivocally yield positive outcomes. The possibility that passion may also have a dark side has not been widely acknowledged or examined in the entrepreneurship literature, even though this possibility has been empirically demonstrated in prior studies examining passion among workers, athletes, and other populations (e.g., Ho, Wong and Lee, 2011; Philippe, Vallerand, Houliort, Lavigne and Donahue, 2010; Vallerand, Mageau, Elliot, Dumais, Demers and

Rousseau, 2008). While a small group of researchers have postulated that entrepreneurial passion could result in negative outcomes (e.g., persistence with a failing venture; failure to acknowledge disconfirming evidence) and have called for studies to investigate “when passion can be enabling for entrepreneurs and when it is debilitating” (Cardon, Zietsma, Saporito, Metherne and Davis, 2005, p. 38), entrepreneurship scholars have yet to respond to this call. Consequently, by accentuating only the positive effects of entrepreneurial passion, extant literature leads us astray by neglecting the potential downside of such passion, and risks perpetuating a skewed, inaccurate view of passion and its consequences. Such an overly positive representation of passion can then mislead decision-makers (e.g., venture capitalists, entrepreneurs) into indiscriminately seeking passionate entrepreneurs to invest in or work with when, in reality, passion may not always yield benefits. Further, from a research standpoint, linking entrepreneurial passion to only positive outcomes, without a concomitant consideration of potential negative effects, serves as a biased and incomplete representation of the phenomenon and falls short of advancing theory in this area.

The imbalanced emphasis in entrepreneurial passion research underscores the need to consider both the benefits and drawbacks of having passion, as well as the contingencies under which either outcome may ensue. We address this need by drawing on literatures related to the dualistic model of passion, social networks, and entrepreneurship to develop and test a more comprehensive model of entrepreneurial passion. Our model distinguishes between two forms of entrepreneurial passion (harmonious and obsessive) to demonstrate that, depending on the type of passion entrepreneurs possess, their financial performance can be either enhanced or diminished by such passion. We also advance theory by explicating the mediating mechanism – network centrality – through which passion translates into financial performance, and test our

model in business networking groups. These groups provide a rich setting to examine entrepreneurs' passion, networking behaviors and the ensuing financial outcomes, as they are formed specifically to help entrepreneurs seek as well as provide referrals, help, and other resources to one another, thereby offering a particularly appropriate context to answer the questions of when and how passion may facilitate or hinder entrepreneurs.

Multiple theoretical and practical contributions emerge from our study. First, the present work contributes to entrepreneurship research by providing clarity and precision on how to conceptualize passion in the entrepreneurial context. We argue that the dualistic model of passion advanced in psychological research (Vallerand, Blanchard, Mageau, Koestner, Ratelle, Léonard, Gagné and Marsolais, 2003) is most appropriate, as it provides a nuanced perspective of passion that is lacking in current conceptualizations of entrepreneurial passion. Specifically, by recognizing that entrepreneurs' passion can be distinguished into either harmonious or obsessive forms, and examining when passion can be useful or harmful to financial outcomes, we provide a finer-grained representation of entrepreneurial passion that surfaces critical relationships and potentially negative outcomes that would otherwise be masked under coarser, pre-existing conceptualizations of entrepreneurial passion. In doing so, we refute existing viewpoints that entrepreneurial passion is always beneficial, and highlight that the type of passion matters. In turn, these new findings are important in extending the nomological network of entrepreneurial passion to include negative outcomes associated with passion (in its obsessive form), and also in tempering the overly-positive view of passion that currently pervades both practitioner and scholarly works.

Second, this work contributes to the social networks literature and network-based research in entrepreneurship. We concurrently examine both an *entrepreneur's* networking

behavior of approaching others in a networking group to discuss work issues (i.e., the entrepreneur's out-degree centrality), and *others'* parallel behavior of approaching the entrepreneur (i.e., the entrepreneur's in-degree centrality). Thus, network centrality represents the mediating mechanism that translates entrepreneurs' passion into financial outcomes. In examining passion as an antecedent of network-building, we advance the social networks literature, where prior studies have typically examined each type of centrality in isolation of the other, and research on the antecedents of each form of network centrality has proceeded along separate paths. For instance, past studies have focused on structural and situational predictors of one's out-degree centrality in terms of information- or advice-seeking behaviors (e.g., Borgatti & Cross, 2003; Cross, Rice and Parker, 2001; Dyer and Ross, 2008), and the influence of *individual* characteristics is not well understood. As for predictors of in-degree centrality, extant work has only studied broad personality traits in the form of the Big Five traits and self-monitoring (Klein, Lim, Saltz and Mayer, 2004; Mehra, Kilduff and Brass, 2001), and the role of more context-specific individual predictors, such as passion for a particular activity, has yet to be addressed. These disparate streams of research then suggest that there are few behaviors or characteristics that can enable individuals to be concurrently high in both forms of centrality. In this study, we show that entrepreneurial passion is, in fact, one characteristic that can explain *both* an individual's and other members' actions in a network.

This is valuable in providing the two streams of research with a common and parsimonious link that marries both perspectives, and also in providing entrepreneurs with insights on a proximal and context-specific individual predictor that can enhance their effectiveness in both seeking out others and also being sought by others. Particularly in the context of networking groups that are formed to allow members to foster ties with one another

and share referrals and other resources, leveraging such network resources requires one to balance *obtaining* resources from group members with *providing* resources to members. The dualistic model of passion offers a concise lens through which we can examine how entrepreneurs can concurrently fulfill both roles to effectively leverage network resources and realize the financial benefits of joining networking groups. This then addresses the call for “more focused research on the differences across individuals in the extent to which network resources are leveraged” (Hoang and Antoncic, 2003, p. 179), and serves as a conceptual advancement to the entrepreneurship literature, where “specifying actor-level differences in how personal networks are built is a way to make theoretical progress” (Vissa, 2012, p. 493).

Third, our study extends research on the dualistic model of passion by proposing new network-based paths through which both harmonious and obsessive passion operate to shape performance. While passion has been previously linked to an individual's own cognition (e.g., engagement) and behaviors (e.g., performance) (e.g., Ho et al., 2011; Murnieks et al., in press; Vallerand et al., 2008), the present study introduces and clarifies the network function of passion by demonstrating that one's passion can shape not only his/her own networking behaviors but also those of others. Our identification of a new set of paths through which both forms of passion can operate further underscores their predictive power, and also deepens our understanding of the passion construct and its nomological network. Finally, in demonstrating that the power of passion on financial outcomes can operate through network mechanisms, we go beyond the individual-centric, self-reported explanatory mechanisms previously examined, and provide conceptual and empirical clarity on the process question of *how* passion translates into financial benefits. Accordingly, our framework and findings provide a strong test of passion's predictive

power, and offer evidence-based, actionable advice for entrepreneurs to identify their passion orientation and adjust their networking behaviors.

Theoretical Development

Dualistic Model of Passion

The dualistic model of passion defines passion as a strong inclination or desire toward an activity that one likes or loves, finds important, and in which one invests time and energy (Vallerand et al., 2003). Beyond this strong desire for the activity, the dualistic model proposes that passion also encompasses an internalization of the activity into the person's identity such that the activity defines who he or she is (e.g., I am an entrepreneur; I am a musician; I am a father) (Philippe et al., 2010; Vallerand et al., 2003). Depending on how the activity is internalized into one's identity and, in turn, whether the person has control over engaging in the activity, there are two different forms of passion – harmonious and obsessive passion.

Individuals with harmonious passion have a strong desire to pursue the activity, and this desire is under their control such that they can freely choose when to engage in the activity. This stems from the fact that they experience an autonomous internalization of the activity, meaning that they voluntarily accept the activity as important to them without any contingencies attached to it. They pursue the activity because of characteristics of the activity itself (e.g., challenging, enjoyable) and not because of external reasons or outcomes associated with the activity (e.g., esteem, recognition) (Sheldon, 2002). Accordingly, the activity occupies a significant but not overpowering role in the individuals' identity, and they remain in control of the activity when they engage in it. Because the activity is in harmony and does not conflict with other aspects of the individuals' lives, harmonious passion has been associated with beneficial affective and cognitive outcomes such as positive emotions, satisfaction with the activity, subjective well-

being, and cognitive absorption when performing the activity (Ho et al., 2011; Vallerand et al., 2003; Vallerand et al., 2008).

In contrast, while obsessive passion also entails a strong desire to pursue the activity, this desire is not under the person's control. Specifically, the individual "cannot help but to engage in it due to a lack of control over internal contingencies that come to control the person and preclude the experience of volition in activity engagement" (Philippe et al., 2010, p. 918). Such obsessive passion stems from a controlled or pressured internalization of the activity into one's identity, such that the individual views the activity as important and feels compelled to internalize it because of outcomes or contingencies associated with it (Vallerand et al., 2003). For example, an entrepreneur who internalizes his entrepreneurial work because of the social acceptance and esteem stemming from being an entrepreneur has obsessive passion. In turn, these pressures and outcomes control the individual and compel him or her to pursue the activity in order to achieve and sustain the outcomes. Consequently, obsessive passion has been shown to result in conflict with other aspects of a person's life (Vallerand et al., 2003), psychological distress (Forest, Mageau, Sarrazin and Morin, 2011), and negative cognition (e.g., inability to concentrate) as well as negative affect (e.g., guilt) when not pursuing the activity (Vallerand et al., 2003). Overall, while harmonious and obsessive passion are similar in reflecting individuals' desire to pursue an activity they like or love, they are distinct in terms of whether the activity remains under the person's control (in the case of harmonious passion) or, instead, controls the person (for obsessive passion).¹

Conceptualizing Entrepreneurial Passion

Although the construct of entrepreneurial passion is not new to the literature, our current conceptualization of harmonious and obsessive passion for entrepreneurial work is different from

the few that have been introduced in recent years. For instance, in Baum and colleagues' work (e.g., Baum et al., 2001), entrepreneurs' passion for their work was conceptualized as "emotions of love, attachment, and longing" (Baum and Locke, 2004, p. 588), and Shane and colleagues similarly viewed it as a selfish love of the work (Shane et al., 2003). Chen, Yao, and Kotha (2009) conceptualized entrepreneurial passion as an intense affective state accompanied by cognitive and behavioral manifestations – as such, they captured an individual's passion using third parties' evaluation of observable manifestations of that individual's affect (e.g., body language, facial expression) and cognition (e.g., content of presentation), rather than assessing the individual's internal affect toward entrepreneurial work. Consistent with our conceptualization of passion, a recurring theme underlying these and other similar approaches (e.g., Baron and Ward, 2004; Bird, 1989; see Cardon et al., 2009 for a recent review) is the positive emotions that an entrepreneur has for the entrepreneurial work. However, our conceptualization goes further to also consider how the work is internalized into one's identity (autonomous or controlled), and thus allows us to distinguish between two forms of passion and investigate their separate relationships with entrepreneurial outcomes.

One conceptualization that comes closer to our present view of passion is that offered by Cardon and colleagues (Cardon, 2008; Cardon, Gregoire, Stevens and Patel, 2013; Cardon et al., 2009; Cardon et al., 2005). They define entrepreneurial passion as "consciously accessible, intense positive feelings experienced by engagement in entrepreneurial activities associated with roles that are meaningful and salient to the self-identity of the entrepreneur" (Cardon et al., 2009, p. 517), and differentiate entrepreneurs' passion into three distinct entrepreneurial identities: inventor, founder, and developer (Cardon et al., 2013). This conceptualization overlaps with our present one in that it not only recognizes passion as having an affective element, but also notes

that the entrepreneurial activities have to be important to the entrepreneur's self-identity such that he or she experiences strong identification with them (Cardon et al., 2005). At the same time, there are key differences between their and our conceptualization of passion.

First, we examine individuals' passion for entrepreneurship as an activity in general, rather than for three distinct forms of entrepreneurial roles. Just as prior studies using the dualistic model of passion have found that individuals are capable of making global assessments of their passion for an activity in general (e.g., teaching), even when it can be broken down into more detailed facets (e.g., conducting classes, serving on committees, interacting with parents), we similarly believe that entrepreneurs are also able to make an overall judgment of their passion for the entrepreneurial endeavor as a whole. This stance is supported by both conceptual and empirical works in the entrepreneurship literature, whereby researchers have acknowledged that the overall role of being an entrepreneur may be the object of passion (Cardon et al., 2013; Murnieks, 2007), and measured entrepreneurial passion in reference to that role as a whole (Murnieks et al., in press). A second difference between Cardon and colleagues' and our conceptualization of passion is that while both views encompass the identification element, the latter goes further to distinguish two ways in which the entrepreneurial activities can be internalized into one's identity. In doing so, we are able to differentiate passion into one that is within an entrepreneur's control (i.e., harmonious passion) and another that is not (i.e., obsessive passion), and in turn demonstrate that passion may, depending on its form, lead to positive or negative outcomes.

Entrepreneurial Passion and Network Centrality

We contend that an entrepreneur's passion will affect his/her ability to occupy a central position in a networking group. Network centrality is crucial as an individual's connections to

others (i.e., social network) facilitate the discovery and exploitation of profitable opportunities (Aldrich, Rosen and Woodward, 1987; Lee and Tsang, 2001; Ostgaard and Birley, 1996; Sullivan and Marvel, 2011). Especially in the present context of business networking groups, members who are able to strategically position themselves in the network to leverage their relationships with other members can gain valuable resources, information, and opportunities that may otherwise be difficult to obtain (Granovetter, 1973; Greve and Salaff, 2003). In particular, we focus on two types of network position – one reflecting the extent to the entrepreneur *approaches others* to discuss confidential work issues (i.e., out-degree centrality), and the other reflecting the extent to which the entrepreneur is *approached by others* to discuss their work issues (i.e., in-degree centrality). These centrality concepts are especially relevant in that they capture the amount of information, advice, and other resources that one obtains from others (Freeman, 1979; Hoang and Antoncic, 2003), which is in fact the primary benefit that networking groups are intended to yield.²

Passion and out-degree centrality. We draw on research in motivation to predict the link between entrepreneurial passion and out-degree centrality (Elliot, 1997). While the motivational aspect of passion is one of its defining characteristics, individuals who are harmoniously passionate are motivated differently relative to those who are obsessively passionate (Vallerand et al., 2008; Vallerand et al., 2007). Harmonious passion reflects an autonomous form of activity engagement where people pursue the activity because of its positive attributes. This form of passion motivates individuals to achieve mastery in an activity, such that harmoniously passionate people seek to develop personal competence and task mastery (Dweck, 1986; Elliott and Dweck, 1988). In the present context, entrepreneurs in networking groups are faced with the challenge of generating referrals to new clients and, subsequently, increasing business revenue.

As such, harmoniously passionate entrepreneurs are likely to proactively embrace the opportunities in networking groups to learn and seek help from others. In contrast, those with less harmonious passion may be less motivated to reach out to others to obtain ideas, referrals, and other forms of resources to help overcome their work issues.

Beyond motivation, harmonious passion may also determine one's ability to find members who are inclined to listen to and discuss the individual's work issues, given the time and effort that this requires from the resource provider's perspective. Because harmoniously passionate individuals tend to experience more positive affect and display more positive emotions (Vallerand et al., 2003), they are better able to form stronger relationships with more members (Philippe et al., 2010). As such, compared to their less harmoniously passionate counterparts, these individuals are likely to have easier access to members who are willing to spend time discussing the former's work issues. Thus, we contend that harmonious passion will be positively associated with the entrepreneur's out-degree centrality in the networking group.

Hypothesis 1: Entrepreneurs' harmonious passion is positively related to their out-degree centrality.

On the other hand, obsessive passion has been associated with a stronger motivation either to surpass others and be recognized for one's superior performance, or to hide one's incompetence and avoid negative judgments associated with that lack of competence (Elliott and Dweck, 1988; Vallerand et al., 2008). Because protecting one's self-worth and avoiding loss of face is a primary concern for obsessively passionate individuals, more so than developing their competence and task mastery, these individuals are expected to be less inclined to seek help. This is because doing so could be construed as evidence of their low ability and competence and, accordingly, may threaten their self-esteem, despite the performance advantage that could ensue

from approaching others (Butler and Neuman, 1995; Shapiro, 1983). Further, the emphasis on protecting self-worth and avoiding face-loss suggests that these individuals, compared to their less obsessively passionate counterparts, are not as able to find suitable members to approach, because not all members are inclined to provide the type of positive, non-ego-threatening feedback sought by more obsessively passionate individuals.

The ability to establish relationships with others who are willing to discuss and provide help on the individual's work issues is also compromised by the negative emotions associated with obsessive passion. Just as the positive emotions ensuing from harmonious passion allows one to develop quality relationships that they can capitalize on, the negative emotions ensuing from obsessive passion can threaten one's ability to establish similar relationships (Philippe et al., 2010). Consequently, obsessively passionate entrepreneurs may face more challenges in finding members who are willing to work with them in resolving their work issues, while those who are less obsessively passionate are not as crippled by such hurdles. Thus, we propose that obsessive passion will be negatively associated with the entrepreneur's out-degree centrality in the networking group.

Hypothesis 2: Entrepreneurs' obsessive passion is negatively related to their out-degree centrality.

Passion and in-degree centrality. Research on emotional displays offers some insights as to how passion can shape entrepreneurs' in-degree centrality. Because approaching someone for advice or resources is risky in that it exposes an individual's lack of knowledge about an issue and also reveals potentially confidential business information, "one's trust in another is likely to shape the extent to which people will be forthcoming about their lack of knowledge" (Borgatti and Cross, 2003, p. 435). Harmoniously passionate people, with their greater tendency to

experience and display positive affect, have an advantage in that such positive emotional displays help to communicate their trustworthiness and cooperativeness, thereby assuaging others' concerns about exposing their vulnerabilities to them (Anderson and Thompson, 2004; Frank, 1988). Providing validation for this argument, Philippe and colleagues (2010) found that harmonious passion was positively related to others' ratings of the individual's relationship quality. Thus, we propose that harmoniously passionate entrepreneurs will have a greater likelihood of being approached by fellow networking group members to discuss work-related issues.

Hypothesis 3: Entrepreneurs' harmonious passion is positively related to their in-degree centrality.

In contrast, obsessive passion has been negatively associated with others' evaluation of a person's relationship quality. Philippe and colleagues (2010) proposed that obsessive passion will be associated with greater emotional defensiveness and aversion to interpersonal experiences (Aron, Aron, and Smolan, 1992). Consistent with predictions, they found that the negative emotions and feelings of psychological distress characteristic of obsessive passion compromised others' evaluations of their relationship quality with the obsessively passionate individual. Extending from these findings, we expect that obsessive passion, with its concomitant negative emotions and defensiveness, will also degrade others' assessment of the individual's trustworthiness and approachability, attributes that are commonly used to decide whether to seek help from someone (Borgatti and Cross, 2003). Thus, we propose that obsessively passionate entrepreneurs will have a lower likelihood of being approached by fellow members to discuss work-related issues, while their less obsessively passionate counterparts will be perceived as more approachable by others and report higher in-degree centrality.

Hypothesis 4: Entrepreneurs' obsessive passion is negatively related to their in-degree centrality.

Network Centrality as Mediator between Passion and Financial Performance

Entrepreneurship research has consistently demonstrated that entrepreneurial passion, when conceptualized as a positive affective state, contributes to financial success (Baum et al., 2001; Chen et al., 2009). However, psychological research that utilized the dualistic model of passion reveals a more differentiated set of results, in that while harmonious passion has been consistently and positively linked to performance, obsessive passion demonstrates a weaker and sometimes non-significant relationship with performance (e.g., Ho et al., 2011; Vallerand et al., 2008; Vallerand et al., 2007). Beyond examining the direct passion-to-performance relationship, prior research has also proposed several mediators in this relationship, including the individual's goals, cognitive engagement, and deliberate practice (e.g., Baum and Locke, 2004; Ho et al., 2011; Vallerand et al., 2008). In the present work, we extend these studies by not only linking both forms of passion to entrepreneurs' financial performance, but also by advancing network centrality (both in-degree and out-degree centrality) as a mediating mechanism.

Network centrality is a particularly relevant mediator in the context we examine – business networking groups – where the optimal way to realize the financial benefits that these groups offer is to position oneself in a central position that gives one fast access to key resources (e.g., information and referrals to new potential customers). Further, the two forms of network centrality examined here capture behaviors that are manifested not just by the focal individual (out-degree centrality) but also by other people in the network (in-degree centrality).

Establishing that the performance effects of entrepreneurial passion are mediated not only by one's own actions but those of others as well goes beyond the individual-centric, self-reported

mechanisms previously proposed. Because these behavioral mechanisms are also more observable and concrete, they represent a more proximal predictor of financial performance than previous mediators capturing one's affect, motivation, or cognition (e.g., Ajzen and Fishbein, 1977; Isen, 1987).

Out-degree centrality and performance. The importance of entrepreneurs' relationships with others in predicting business venture success is established in studies examining entrepreneurial social networks (e.g., Aldrich and Zimmer, 1986; Birley, 1985; Shane and Cable, 2002). Interpersonal relationships serve to facilitate the amount and speed of resources that are valuable to an entrepreneur (Aldrich and Reese, 1993; Hansen, 1995). In the context of discussion-oriented relationships where an entrepreneur approaches others to discuss work issues, scholars have observed that such relationships are critical in providing "leads to where to obtain resources such as information, property, capital, and credit" (Greve and Salaff, 2003, p. 3). Thus, we contend that an entrepreneur with higher out-degree centrality in the business network will enjoy greater financial performance, premised on the following reasons.

First, having stronger relationships with others increases the amount as well as the diversity of resources that an individual can obtain (Stam and Elfring, 2008). These resources enhance the entrepreneur's opportunity recognition (Ozgen and Baron, 2007), which is a fundamental aspect of the entrepreneurial process. Second, to the extent that an entrepreneur openly discusses details of his/her work issues with others, this provides others with richer knowledge about the issues and, in turn, allows them to not only conduct a more efficient search for resources, but also to better identify the appropriate resources and/or solutions that best meet the entrepreneur's needs (e.g., referrals to new potential customers) (Zhang, Soh, and Wong, 2010). Third, frequency of interactions with others has been found to facilitate greater

collaboration and a sense of shared vision with the others, which increases the latter's motivation to provide resources to help the entrepreneur (Aldrich and Zimmer, 1986; Zhang et al., 2010).

While approaching others does yield benefits, there are also potential costs associated with such behaviors. One such cost is the risk of exposing one's lack of knowledge or inability to solve work issues, which may threaten the individual's self-esteem and his/her reputation and others' judgment of the individual (Brockner, 1988). Another cost is the future obligation to reciprocate the help provided, the extent of which will vary depending on the characteristics (e.g., status; attitude) of the person being approached (Borgatti and Cross, 2003; Gouldner, 1960). However, because individuals tend to be selective in terms of whom they approach, only going to targets they deem trustworthy, accessible, and unlikely to impose excessive future demands (Borgatti and Cross, 2003), the benefits derived from approaching these targets are expected to outweigh such costs.

In essence, from both resource acquisition and motivation standpoints, we predict that entrepreneurs who have higher out-degree centrality will be better able to obtain resources from other members and realize the financial benefits that networking groups offer. Further, given the context and purpose of networking groups such as those examined here, one's ability to obtain resources from others is likely to be a particularly crucial mechanism through which passion translates into financial benefits. The small and high-interaction nature of such groups also amplifies the role of passion in shaping members' observations of and reactions to the focal individual. As such, we expect centrality to play a key mediating role in linking passion to financial performance.

Hypothesis 5: Entrepreneurs' out-degree centrality is positively related to their financial performance.

Hypothesis 6: Entrepreneurs' out-degree centrality will mediate the relationships between (a) harmonious passion and financial performance, and (b) obsessive passion and financial performance.

In-degree centrality and performance. We predict that an entrepreneur who has high in-degree centrality in terms of being approached by others will also enjoy similar financial benefits. In particular, social exchange theory and the norm of reciprocity that governs interpersonal relationships dictate that individuals will respond to others in kind, with social obligations compelling parties to behave generously to each other (Gouldner, 1960). This norm is especially strong in business networking groups where members interact with one another on a regular, ongoing basis, rather than in a one-time interaction. This then reduces an individual's inclination to engage in opportunistic behaviors such as relying on a member for resources without returning the favor. The fact that any two members are embedded within the larger group where their actions are likely to be observed by, and known to, other group members further increases reciprocal behaviors and diminishes opportunistic behaviors (Oh, Chung, and Labianca, 2004). Thus, to the extent that an individual is approached by a member to help with work issues, the individual is likely to receive reciprocated benefits, both solicited and unsolicited (e.g., referrals given by the member to third-parties without the individual's knowledge; timely information that helps the individual capitalize on short-term opportunities or avoid impending threats), that enhance the individual's financial performance.

Research suggests at least two other forms of indirect benefit that can ensue from in-degree centrality. By default, individuals who are approached by others to discuss confidential work issues have access to sensitive information that they can potentially use to their advantage in making business decisions (Brass, 1984; Sparrowe, Liden, Wayne, and Kraimer, 2001). Their

ability to accumulate knowledge about others' problems and potential solutions can not only facilitate their own decision-making and problem-solving, but also enhance their value and relative status to others in the network (Baldwin, Bedell, and Johnson, 1997). Additionally, because networks serve a reputational or signaling mechanism (Deeds, Mang, and Frandsen, 1997; Hoang and Antoncic, 2003), high in-degree centrality can act as a signal of one's expertise, knowledge, and/or approachability, and this reputational advantage will then enhance the individual's standing and influence in the group, thereby allowing him/her to use the position to direct the behavior of others (Aldrich and Zimmer, 1986). Thus, despite the costs of being sought after (e.g., time and effort required to respond to others), evidence suggests that the benefits outweigh such costs and result in performance advantages to the central individual (e.g., Brass, 1984; Sparrowe et al., 2001). Accordingly, extending from the earlier discussion on passion as a determinant of one's in-degree centrality, we also expect that in-degree centrality will be a critical mediating mechanism linking harmonious and obsessive passion to financial outcomes.

Hypothesis 7: Entrepreneurs' in-degree centrality is positively related to their financial performance.

Hypothesis 8: Entrepreneurs' in-degree centrality will mediate the relationships between (a) harmonious passion and financial performance, and (b) obsessive passion and financial performance.

Method

Participants and Procedure

We collected data from members of networking groups affiliated with Business Networking International (BNI) in a region of the Southeastern United States. BNI is the world's largest business networking organization aimed at connecting members with one another to

exchange referrals and other resources, with the ultimate goal of growing members' business income. BNI operates in over 50 countries with over 2,800 chapters (Thompson, 2010), and each BNI chapter consists of numerous networking groups, which in turn consist of multiple members from across different industries. Members meet in person weekly to share referrals, ideas, and other resources with fellow members.

All members managed small businesses, and consistent with existing studies using participants from BNI, we refer to these individuals as entrepreneurs (e.g., Dafna, 2008; Pollack, VanEpps, and Hayes, 2012), as the members are all actively engaged in the entrepreneurial process of discovering, evaluating, and exploiting opportunities to create goods and services (Shane and Venkataraman, 2000). Networking groups provide a suitable context to examine the relationships among entrepreneurs' passion, network centrality, and financial performance, as their explicit purpose is to help members seek and provide referrals, help, and other resources from and to one another. Because membership in these groups is stable and fixed (members pay an annual fee and commit to attending weekly meetings), they constitute a naturally bounded network for which complete network data can be obtained from all members and used to arrive at a representative picture of any one member's network position (Marsden, 1990).

Each participant belonged to one networking group that consisted of other small business managers from different industries, and each networking group varied in size from 8 to 37. We invited all 732 members, representing 39 networking groups in the BNI region, to participate in the study, and received responses from 360 (49.2%) of them. Because our focus is on members' interactions with other group members, we adopted a conservative approach and excluded respondents whose networking groups had less than half of their members responding.³ This decreased our final sample to 206 respondents that made up 15 networking groups. A

comparison of the groups that were included in the final sample with those that were not revealed non-significant differences in terms of group size ($t = 1.69, ns$), amount of referrals received from the group ($t = -0.29, ns$), and total revenue generated from referrals within the group ($t = 0.52, ns$). The average age of each respondent was 46.4 years ($SD = 11.7$), and 50% were male. The average tenure of respondents at their company was 8.29 years ($SD = 8.13$), and the average number of employees in a member's company was 48.6 ($SD = 84.6$).

Measures

Passion. We measured respondents' harmonious and obsessive passion for the activities associated with their entrepreneurial business using two six-item subscales from the Passion Scale (Vallerand et al., 2003), which has been developed and validated in numerous previous studies (e.g., Vallerand et al., 2007). We asked respondents to indicate their answers in reference to the work activities associated with their entrepreneurial business, using a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). A sample item for harmonious passion is "For me, my work is a passion that I still manage to control," and a sample item measuring obsessive passion is "I have almost an obsessive feeling for my work." Both scales were internally consistent with alpha coefficients of 0.89 for harmonious passion and 0.88 for obsessive passion.

In-degree and out-degree network centrality. To capture the overall network structure in each group, we used the roster method that is commonly used for sociometric surveys (Marsden, 1990). We provided each respondent with a list of members in his/her networking group and asked the respondent to indicate, on a scale of 0 (not at all) to 4 (very frequently), how often he/she approached each of the other members to discuss confidential work issues. Following the approach recommended by Wasserman and Faust (1994) and used in prior studies (e.g., Morrison, 2002; Sparrowe et al., 2001), we then computed a respondent's out-degree centrality

(i.e., approaching others) by aggregating his/her responses and then standardizing this measure by dividing the aggregated score by $(N - 1)$ (where N represented the number of respondents in the group), so as to account for differences in group size across the networking groups. Likewise, to compute a respondent's in-degree centrality (i.e., approached by others) in the network, we aggregated other members' responses of how often they approached that particular respondent to discuss confidential work issues. We then divided this aggregate score by $(N - 1)$ to arrive at a standardized measure that is comparable across different group sizes.

Financial performance. We assessed financial performance using two different measures. The first captured the income that has been directly generated from referrals by other group members. This was measured by asking respondents to indicate how much money the referrals provided by each of the other members have generated in the last 12 months. We aggregated this to obtain the total income generated by the group, and then divided this by $(N - 1)$ to arrive at a standardized measure that accounted for differences in group size. We also included a second, more expansive measure of financial performance by asking respondents to indicate their current total business income. While both measures captured financial performance, referral income reflected the specific subset of business income ensuing from referrals from network members, and is modeled as a more proximate consequence of passion and an antecedent to total business income.

Control variables. We examined seven control variables that have been previously demonstrated to predict one's network position and entrepreneurial performance. First, because high performers tend to be approached for help and information while poor performers tend to approach others for help (Borgatti and Cross, 2003; Fedor, Rensvold, and Adams, 1992), we controlled for respondents' previous year's business performance by asking them to indicate, on

a 5-point scale ranging from “much worse than expected” to “much better than expected,” how their business had performed in the previous 12 months. To ensure that the effects of passion are independent of the respondents’ ability or competence, we used the 12-item core self-evaluations scale (Judge, Erez, Bono, and Thoresen, 2003), capturing respondents’ appraisal of their effectiveness and capability as a person, to serve as an approximate control of their ability. This scale was internally consistent with an alpha coefficient of 0.85. Because core self-evaluations also encompass one’s emotional stability, including this control variable takes into account prior findings that emotional stability predicted one’s network centrality (Klein et al., 2004).

Following earlier entrepreneurship studies (e.g., Zhang, Zyphur, Narayanan, Arvey, Chaturvedi, Avolio, Lichtenstein, and Larsson, 2009), we included several key demographic variables consisting of the respondent’s gender (0 = female, 1 = male), tenure in their company (measured in years), and organization size (number of employees). We also included industry type which was categorized into four broad classes used in prior research (e.g., Sine, Mitsuhashi, and Kirsch, 2006): services, manufacturing, trade, and finance/insurance. However, because preliminary analyses indicated that differences in the industry type were not predictive of any of the endogenous variables, we excluded industry type from subsequent analyses so as to have sufficient statistical power and to avoid the occurrence of biased parameter estimates arising from including unnecessary control variables (Becker, 2005).

Results

Means, standard deviations, and correlations for all variables are presented in Table I. We used structural equation modeling to test our hypotheses, and following Anderson and Gerbing’s (1988) recommendations, we first conducted a confirmatory factor analysis of all multi-item scales in our study (i.e., the two scales measuring passion). Because of our relatively small

sample size, we used a partial disaggregation strategy, specifically the item-to-construct balance approach, to create three parcels comprising two items each for both the harmonious passion and obsessive passion constructs (Little, Cunningham, Shahar, and Widaman, 2002). Compared to using individual items as indicators, this approach yields a more favorable ratio of indicators to sample size (Williams and O'Boyle, 2008; Williams, Vandenberg, and Edwards, 2009). Results of the confirmatory factor analysis showed that the data fitted well with the conceptual model ($\chi^2 = 38.7$, $df = 8$, SRMR = .06, CFI = .95). In addition to assessing the overall model fit, we examined the factor loadings, reliability, and validity of the two constructs. Each parcel loaded significantly onto the appropriate latent constructs, with factor loading values above 0.7 and exceeding the 0.5 threshold value commonly used in factor analysis (Hulland, 1999). Reliability was assessed with Jöreskog's rho, and the value for both constructs was 0.88, exceeding the recommended 0.7 threshold value (Jöreskog, 1971). Finally, validity was assessed by computing the average variance extracted (AVE), which estimates the proportion of variance explained to the variance due to random error (Bagozzi and Yi, 1988). The AVE values were 0.72 and 0.71 respectively for the harmonious and obsessive passion constructs, exceeding the recommended 0.5 value and indicating good convergent validity (Fornell and Larcker, 1981).

 INSERT TABLE I ABOUT HERE

Due to the nesting of individuals in networking groups, we examined the assumption of independence by testing whether group membership was a significant predictor of the four endogenous variables. Results indicated that with the exception of in-degree centrality ($F = 3.30$, $p < 0.01$), the other three endogenous variables did not differ across the groups. Thus, to partial

out the group-level differences in in-degree centrality, we included cluster means of this variable as a control variable predicting the two forms of income (Antonakis, Bendahan, Jacquart and Lalive, 2010; Mundlak, 1978). For each respondent, the cluster mean value was simply the average of all members' in-degree centrality in his/her group. As such, these values are invariant within cluster (i.e., group) but vary between clusters, and controlling for them at the individual-level serves to account for group-level differences in that variable.

We then tested the structural model representing our hypothesized relationships. For the four endogenous variables, we accounted for measurement error by specifying each of their error variance as 0.1 of the respective variable's variance, and setting the measurement path estimate to 0.95 of the variable's standard deviation (Sörbom and Jöreskog, 1982). For the control variable of core self-evaluations, we used the scale mean as the indicator so as to increase sample size relative to the parameter estimates. We then set the path estimate to the square-root of the scale reliability, and the error variance to the scale variance times 1 minus the scale reliability in order to account for measurement error (Hayduk, 1987). For the control variables of gender, tenure, and organization size, we assumed that no error existed in their measurement because these were objective measures. The results are presented in Figure 1, and overall, the fit of the hypothesized model was good ($\chi^2 = 137.70$, $df = 56$, SRMR = .05, CFI = .91).

 INSERT FIGURE 1 ABOUT HERE

Consistent with our predictions in Hypothesis 1, harmonious passion was positively related to respondents' out-degree centrality ($\gamma = 0.27$, $p < .05$). However, harmonious passion did not predict in-degree centrality ($\gamma = -0.01$, ns), thereby failing to support Hypothesis 3. For

obsessive passion, results did not support Hypothesis 2 which proposed that obsessive passion would predict respondents' out-degree centrality ($\gamma = -0.04$, *ns*). However, obsessive passion was negatively related to in-degree centrality as predicted in Hypothesis 4 ($\gamma = -0.23$, $p < .01$).

In terms of the relationships between the two forms of centrality and financial outcomes, results indicated that, consistent with Hypotheses 5 and 7 respectively, out-degree centrality was positively related to referral income ($\beta = 0.33$, $p < .05$), as was in-degree centrality ($\beta = 0.40$, $p < .01$). Also, as expected, referral income was positively related to overall business income ($\beta = 0.31$, $p < .01$). As for control variables, we found that men had higher in-degree centrality ($\gamma = 0.25$, $p < .01$), tenure positively predicted overall business income ($\gamma = 0.21$, $p < .01$), organization size positively predicted respondents' out-degree centrality ($\gamma = 0.46$, $p < .01$) and business income ($\gamma = 0.13$, $p < .05$), and cluster means of in-degree centrality positively predicted referral income ($\gamma = 0.19$, $p < .05$).

To examine whether the two forms of centrality mediated the relationships between passion and financial performance as predicted in Hypotheses 6 and 8, we tested a non-mediated model that had direct paths from the two passion variables to referral income, to explore the possibility that the passion-to-referral income link occurred through mechanisms not involving network position. Both direct paths were not statistically significant ($\gamma = 0.06$ and -0.10 for harmonious and obsessive passion respectively, *ns*), and this model provided a significantly worse fit than the hypothesized model (change in $\chi^2 = 13.80$, change in $df = 2$, $p < .01$). We then tested a partial mediation model that included direct paths from the two passion variables to referral income. Both direct paths were again not statistically significant ($\gamma = -0.01$ and -0.09 for harmonious and obsessive passion respectively, *ns*), and this model did not provide a better fit compared to the hypothesized model (change in $\chi^2 = -1.23$, change in $df = 2$, *ns*). Finally, we

tested an alternative model that included direct paths from the two passion variables to overall business income, to explore the possibility that the passion-to-business income link occurred through mechanisms not involving network position or referral income. The path from harmonious passion to business income was not significant ($\gamma = -0.04$, *ns*), while the path from obsessive passion to business income was marginally significant ($\gamma = -0.12$, $p = .09$). This model failed to provide a better fit compared to the hypothesized model (change in $\chi^2 = 3.34$, change in $df = 2$, *ns*). Thus, these results provide support for Hypotheses 6 and 8.

Overall, the effect size of harmonious passion on referral income was 0.08, which is comparable to a medium effect size (Cohen, 1988). This effect was accounted for primarily by the mediating variable of out-degree centrality (0.09) and less so by the mediating variable of in-degree centrality (-0.01). The effect size of obsessive passion on referral income was -0.10, and this was accounted for mainly by the mediating variable of in-degree centrality (-0.09) and, to a smaller extent, by out-degree centrality (-0.01). The total effect sizes of harmonious passion and obsessive passion on overall business income were 0.03 and -0.03 respectively, both of which exceeded the threshold of small effect size specified by Cohen (1988). Finally, the hypothesized model explained 38.8% of variance for out-degree centrality, 13.2% for in-degree centrality, 28.6% for referral income, and 17.4% for business income.

Additional Analyses

To test our contention that distinguishing entrepreneurial passion into its harmonious and obsessive forms will yield more sensitive results than using a coarser, aggregated measure of passion, we ran a supplementary structural equation model as a form of sensitivity analysis. We modeled passion as one overall latent construct with all the passion items loading onto it. The results indicated that several of the hypothesized relationships that were previously significant

became non-significant using this coarser construct. Specifically, the path from overall passion to in-degree centrality was non-significant, potentially because the negative effect originally ensuing from obsessive passion was offset by the positive effect from harmonious passion. The total effects of overall passion on referral income and business income were also non-significant (0.07 and 0.02 respectively), with the overall model fit considerably poorer than the original model representing passion in its two forms ($\chi^2 = 483.7$, $df = 65$, SRMR = .12, CFI = .55). This analysis provides evidence that using a coarser measure of passion that fails to differentiate between its harmonious and obsessive forms risks masking important relationships, and underscores the value of conceptualizing entrepreneurial passion using a finer-grained approach encapsulated in the dualistic model.

Discussion

This study demonstrates the financial implications arising from how an individual approaches and is approached by others in the network, which in turn varies systematically according to that individual's passion. Our findings suggest that harmonious passion operates through a more proactive mechanism that involves the individual actively seeking out others in the network, while obsessive passion operates through a more defensive mechanism that deters others from approaching the obsessively passionate individual. Accordingly, these findings underscore the value of using a passion lens to examine entrepreneurs' network configuration and financial performance, and provide a nuanced perspective of entrepreneurial passion where it can enhance or diminish financial success.

Within the current entrepreneurial passion literature, consensus supports an overly positive view of passion where such a characteristic is deemed unequivocally desirable and will result in positive outcomes (e.g., Baron, 2008; Baum & Locke, 2004; Chen et al., 2009). Our

work, in contrast, empirically shows that entrepreneurial passion, in its obsessive form, is in fact detrimental to financial performance, thereby debunking the dominant view and providing concrete evidence to validate Cardon and colleagues' (2005) proposition that entrepreneurial passion can also have a dark side. In doing so, we offer a more tempered view of entrepreneurial passion for researchers and entrepreneurs, reveal new relationships that were previously masked using coarser conceptualizations of passion, and extend the nomological network of entrepreneurial passion to encompass negative outcomes that may result.

We also advance theory-building in both psychological and entrepreneurial passion research by introducing networking behaviors as the mediating link between passion and financial performance. Extant work has thus far examined only the direct link between passion and performance, or proposed individual-centric mediating mechanisms such as the individual's motivation, goals, and cognition (e.g., Baum and Locke, 2004; Cardon et al., 2009; Ho et al., 2011; Murnieks et al., in press). By showing that entrepreneurial passion can strengthen or worsen one's financial success through its effects on not only one's own behaviors but also the concretized actions of others, we provide a strong test of passion's predictive power, highlight the wider reach of entrepreneurial passion, and draw attention to an underexplored behavioral-based mechanism through which passion can operate.

Our findings also contribute to social networks theory, particularly that in the entrepreneurial context. We draw on research in both social network development and social capital to demonstrate that entrepreneurial passion is an individual characteristic that can explain both an individual's and others' actions in a network, thereby marrying the two streams of research with a common link. This also addresses existing research gaps on the individual characteristics that can shape how well entrepreneurs configure their networks to leverage the

resources within (Hoang and Antoncic, 2003; Kilduff and Tsai, 2005; Vissa, 2012), and highlight an avenue through which entrepreneurs can occupy central positions in their networks.

In terms of specific hypotheses, the majority of these were supported with a couple of exceptions. First, while we expected harmonious passion to increase others' tendency to seek out the individual, the results indicated that this relationship was not significant. This could be attributed to the present context of business networking groups. In such groups, members' choice to approach someone about work issues may be determined not only by the target's approachability but also by the ability of the target to provide the resources sought. Insofar as harmonious passion captures the former but not the latter, this may explain why harmonious passion did not predict one's in-degree centrality. Second, obsessive passion failed to deter an individual's tendency to seek out others, a finding that may also be understood in light of the study context. Because these groups meet face-to-face weekly and members can, over time, develop relationships that offer not only task-based resources but also social support (Pollack et al., 2012), this setting may foster a level of comfort and ease in interacting with others. Such familiarity may then lessen the concern about face-loss and threat to one's self-esteem that affect the obsessively passionate, thereby accounting for a null relationship.

Implications for Entrepreneurial Passion Research

Prior conceptualizations of entrepreneurial passion have primarily adopted a unidimensional perspective of passion as a positive affect (e.g., Baum and Locke, 2004) or categorized entrepreneurial passion into its various entrepreneurial roles (e.g., Cardon et al., 2013), without taking into account how the entrepreneur internalizes the role into his/her identity. While a more recent study by Murnieks and colleagues (in press) makes a first step in incorporating the internalization element by examining entrepreneurs' harmonious passion, the

role of obsessive passion was not considered in that study. Our current treatment of passion provides a more comprehensive and tempered view of entrepreneurial passion by considering the two distinct ways in which the entrepreneurship role can be internalized into one's identity, which then allows us to demonstrate that, contrary to prior findings, passion does not unequivocally result in positive outcomes.

We offer a theoretically driven and empirically validated rationale for how passion can be operationally defined within the context of entrepreneurship – as a dualistic model. This clarification helps move the field forward by highlighting the need to consider the different forms in which the entrepreneurial activity is internalized into one's identity and, in turn, distinguish the type of entrepreneurial passion one has. This will not only allow scholars to eliminate unneeded measurement variance that may suppress important relationships or produce contradictory findings relating to entrepreneurial passion, but also facilitate the development of a richer and more precise nomological model of entrepreneurial passion that accurately reflects the distinct consequences and antecedents of each form of passion.

It should be noted that the present conceptualization and measurement of entrepreneurial passion is not at odds with that presented by Cardon and colleagues (2009; 2013). We do not refute the argument that entrepreneurs can have varying levels of passion for different entrepreneurial roles. Rather, we contend that the choice of whether to examine passion in relation to one's overall role of being an entrepreneur or to more specific entrepreneurial roles should ultimately be guided by one's research question. Further, future work on entrepreneurial passion can integrate the two perspectives by assessing both harmonious and obsessive passion for each of the entrepreneurial roles, and investigating how these may complement or substitute for each other.

Implications for Social Network Research

We offer a more context-specific and proximal set of predictors of network position than the few personality traits and individual attributes previously examined. Further, because passion can be developed and nurtured (Mageau, Vallerand, Charest, Salvy, Lacaille, Bouffard, and Koestner, 2009), unlike stable traits such as agreeableness and extraversion, the present findings offer more actionable recommendations on how entrepreneurs can develop their harmonious passion so as to realize the financial benefits from joining networking groups. Linking passion to *both* in-degree and out-degree centrality not only offers a parsimonious conceptual framework to think about drivers of network position, but also provides a viable path through which entrepreneurs can balance their need to obtain resources from others with their obligation to provide resources to others.

Our finding that one's felt passion can shape the behaviors of others in the network bolsters and extends previous finding that one's passion can be observed by others and shape their behaviors (Chen et al., 2009). In particular, in small and high-interaction networks such as the groups examined here, others' observations of and responses to one's passion may be amplified because of the reputational mechanism inherent in smaller, more cohesive networks. In contrast, these effects may be weaker or more diffused in larger, sparser networks where information on a member's passion and others' actions in relation to that member is not as widely shared, thereby suggesting a possible boundary condition under which one's passion can shape his/her network configuration.

In demonstrating that passion can shape one's network configuration, our study also stimulates further questions on the interplay between passion and networks. For instance, while membership in the networking groups examined here was not self-selected, it is possible that

entrepreneurs may, if given a choice, include only similarly passionate members in their network, which in turn may have implications for how beneficial such networks can be. We speculate that passion may also play a moderating role in facilitating or hindering one's effectiveness in mobilizing resources in their social networks, such that harmoniously passionate entrepreneurs are better able to realize the resource potential that networks bring, while obsessively passionate individuals may face greater challenges in utilizing these network resources to their advantage.

Implications for Practice

Our findings offer several implications for practice. First, the fact that harmoniously passionate entrepreneurs enjoy greater financial rewards, while those who are obsessively passionate see diminished income, suggests that entrepreneurs would do well to develop their harmonious passion or inhibit obsessive passion. Prior research offers several insights on how to do so. To the extent that individuals are able to develop a sense of autonomous identity from their entrepreneurial work, and to dedicate their attention to that work, they are more likely to value that work, spend more time on it, and consequently become passionate about it (Mageau et al., 2009). Further, individuals who are able to exercise autonomy in carrying out their entrepreneurial work are more likely to develop harmonious passion than those who lack that autonomy in deciding how to conduct their work (e.g., because of demands and expectations from business partners, spouses, etc.) and, accordingly, are more likely to experience obsessive passion. In instances where an individual has yet to develop passion, such as in the early stages of activity engagement, the above strategies have been found effective in cultivating passion.

At the same time, because passion captures a “relatively stable person-activity relationship” (Philippe et al., 2010, p. 917), it may be challenging to alter an entrepreneur's obsessive passion if it has already developed, or to cultivate harmonious passion if it has failed to

surface despite one having engaged in entrepreneurial work for a significant length of time. In those instances, a better alternative may be to focus on other ways, independent of one's passion, that enhance the desirable network positions examined here, especially given their positive association with financial outcomes. For instance, individuals could seek to develop expertise or connections in a specific area, and build a reputation within the networking group for providing such expertise or referrals to other members. This will then enhance others' propensity to approach this individual for resources, and in turn yield greater reciprocal help from the others, thereby enhancing the individual's business performance as demonstrated in this study. As for obsessively passionate people who have a more competitive orientation toward others and are perceived by others as being less approachable, one possible strategy is for such individuals to cognitively reframe the provision of resources and help to others as an opportunity for them to not only demonstrate to others their superior mastery of the entrepreneurial endeavor, but also to make others indebted to them. In doing so, they may be more amenable to being approached by others and providing them with the necessary resources to deal with work challenges.

Limitations and Future Research

Because we used a cross-sectional design in our study, we are unable to make causal conclusions as to whether passion impacts financial outcomes, or whether entrepreneurs with better financial performance perceive themselves as having more harmonious passion, while those with poorer financial performance see themselves as being more obsessively passionate. While such conclusions can be made only in longitudinal and experimental studies, the fact that previous longitudinal studies examining passion (outside of the entrepreneurship context) found that passion drove subsequent behaviors and performance provides some indication that similar causal relationships are likely to occur in the present context as well (e.g., Vallerand et al., 2007).

Furthermore, the fact that we found some support for the proposed mediation model suggests that the proposed direction, from passion to financial performance, is indeed valid, and we encourage future research to adopt a longitudinal or experimental design to more fully establish the direction of causality.

To mitigate against the threat of common method variance biasing the results, we adopted several procedural remedies recommended by researchers (Podsakoff, MacKenzie, Lee and Podsakoff, 2003). First, we methodologically separated the measures by using different response formats to measure our predictors (Likert scales), mediators (sociometric approach), and outcomes (continuous scales that measure objective outcomes). Second, we used different and multiple sources to provide data, such that other network members provided data on their interactions with the focal individual, which were then used to construct the in-degree centrality variable. The fact that this other-reported variable was not only significantly related to self-reported obsessive passion and the two financial performance measures, but also mediated the relationship between self-reported predictors and outcomes, indicates that our findings are not merely artifacts of common method bias. Third, the fact that our supplementary analyses revealed a better model fit when the two passion constructs were modeled separately than together further suggests that common method variance is not a significant threat.

Because we measured individuals' harmonious and obsessive passion for entrepreneurial work in general, rather than distinguishing passion for different aspects of entrepreneurial work as conceptualized in previous studies (Cardon et al., 2009), we are unable to make specific conclusions about whether entrepreneurs may experience harmonious passion for one aspect of entrepreneurial work and obsessive passion for another aspect of such work. Nonetheless, we believe that the present findings serve to inform us about entrepreneurs' passion and its

relationship to entrepreneurial effectiveness, and that entrepreneurs can and do experience passion for the entrepreneurial endeavor as a whole. Such a conception is also consistent with previous entrepreneurial research examining individuals' passion for their entrepreneurial work as a whole (e.g., Baum et al., 2001; Chen et al., 2009; Murnieks et al., in press). Notwithstanding, we recommend that future research explore whether entrepreneurs' passion can take on different forms for different aspects of the entrepreneurial enterprise, and assess the relative impact of these two forms of passion on each of these aspects. We also advocate that the measure of entrepreneurial passion should ultimately depend on the research question and on whether one is interested in understanding global or facet-specific aspects of the activity.

A boundary condition of this study is the research context of formal business networking groups that, while growing in number and popularity, are nonetheless distinctive. Overall, though, we believe that the present findings should extend to entrepreneurs who are not necessarily members of business networking groups because a key aspect of the entrepreneurship endeavor involves networking and establishing connections with other people, regardless of whether this occurs in a formal or informal setting (Aldrich and Zimmer, 1986). Given the key role of networking to the entrepreneurship enterprise, we expect that harmoniously passionate entrepreneurs who occupy central network roles would enjoy similar benefits seen here, just as obsessively passionate ones may be less able to leverage the advantages of networking. We encourage researchers to not only replicate the present findings in other entrepreneurial contexts, but also contrast the effects of centrality and brokerage in less bounded networks.

Future research can also examine other mediators that link entrepreneurial passion to key outcomes. These include various types of cognition that have been proposed (Cardon et al., 2005), as well as behaviors that go beyond networking interactions. In particular, while

persistence and absorption have been advanced as mediating behavioral mechanisms (Cardon et al., 2005), previous findings from the dualistic model of passion suggest that absorption will only be experienced by those with harmonious passion, not obsessive passion (Ho et al., 2011). Future research can shed light on how or when absorption plays a mediating role in the passion-to-performance relationship. Likewise, to the extent that subsequent research can establish other consequences (e.g., rate of venture growth; psychological satisfaction) that stem from passion, this would serve to further validate the importance of passion to the entrepreneurial context.

In conclusion, this study applies the dualistic model of passion to the entrepreneurship context and demonstrates that both harmonious and obsessive passion are associated with entrepreneurs' financial outcomes via one's centrality position in the network. In so doing, we contribute to the limited body of empirical research on entrepreneurs' passion, offer a finer-grained conceptualization of passion that sheds light on when passion can have positive or negative repercussions on financial performance, and highlight the mediating process through which this can occur.

Notes

¹ The passion construct, while seemingly comparable to other individual constructs such as intrinsic and extrinsic motivation, positive and negative emotions, job satisfaction, and commitment, has in fact been conceptually and empirically distinguished from these other constructs in multiple studies (Amiot, Vallerand and Blanchard, 2006; Deci and Ryan, 1985; Ho et al., 2011; Koestner and Losier, 2002; Liu, Chen and Yao, 2011; Philippe et al., 2010; Vallerand et al., 2003). We refer readers to these earlier works for details.

² While prior entrepreneurship research has focused on other network positions, primarily structural holes (e.g., Oh and Kilduff, 2008; Stam, 2010), our decision to examine network centrality is motivated by the current research context. In business networking groups, members know and interact with one another on a regular basis, and thus the key network benefit derived from such groups is the amount of resources that a member can get from others, traditionally reflected by the centrality measure (Freeman, 1979). Further, despite being commonly examined in the entrepreneurial context, structural holes and their pursuant benefits tend to be manifested in sparse, disconnected networks (Burt, 1997), which is not characteristic of business networking groups where membership is bounded and members interact regularly.

³ We conducted similar analyses using an even more conservative threshold of 80% of group response, which equated to 177 respondents from 12 groups. Except for one relationship that became marginally significant, the overall pattern of results was similar to that using the present threshold of 50% group response. Thus, to ensure sufficient statistical power, which is particularly important for structural equation modeling, we retained respondents that had at least 50% of group responses.

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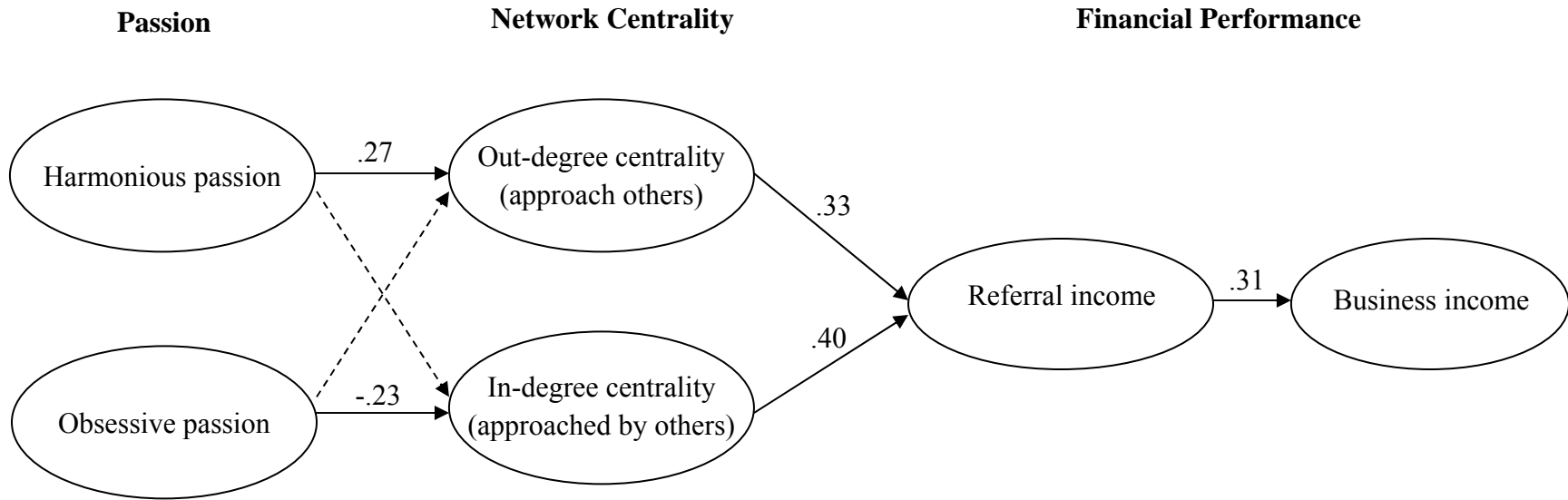
Table I

Means, Standard Deviations, and Correlations Among Variables

Variables	Mean	s.d.	1	2	3	4	5	6	7	8	9	10
1. Gender	1.44	0.50										
2. Organizational tenure	8.29	8.13	-.09									
3. Organization size	48.59	84.60	.11	.04								
4. Core self-evaluations	4.95	0.56	.02	.15*	.04							
5. Prior performance	3.32	1.15	.02	-.11	-.04	.31**						
6. Harmonious passion	4.00	0.69	.01	.09	-.06	.42**	.15*					
7. Obsessive passion	2.50	0.83	.04	-.03	-.04	-.02	-.06	.11				
8. Out-degree centrality	0.71	0.61	-.04	.18*	.19	.10	-.08	.15*	.02			
9. In-degree centrality	0.71	0.40	-.23**	.15*	.05	-.02	-.07	-.06	-.18**	.27**		
10. Referral income	489.07	667.45	-.13	.10	-.05	.04	.07	-.09	-.13	.20**	.40**	
11. Business income	72404.37	52974.29	-.08	.24	.11	.12	.10	.01	-.16*	.00	.17*	.31**

Figure 1

Hypothesized Model and Results



* $p < .05$. ** $p < .01$.

Note: Standardized parameter estimates are shown. Hypothesized relationships that are not significant at $p < .05$ are denoted with dashed arrows. Control variables are not shown here for the sake of clarity.