

Psychological Resilience and Its Downstream Effects for Business Survival in Nascent Entrepreneurship

Entrepreneurship Theory and Practice
1–23

© The Author(s) 2018

Article reuse guidelines:

sagepub.com/journals-permissions

DOI: 10.1177/1042258718801597

journals.sagepub.com/home/etp



Ingrid C. Chadwick¹  and Jana L. Raver²

Abstract

While scholars frequently argue that nascent entrepreneurs will be more successful if they are resilient, this assumption remains untested and the mechanisms for its potential benefits are unknown. To establish the utility of this psychological construct, we draw from Fredrickson's broaden-and-build theory (1998) to develop and test theory on the processes through which psychological resilience influences first-time entrepreneurs' business survival. Results of a time-lagged study of nascent entrepreneurs followed over a 2-year period support this theory, highlighting the cognitive and behavioral ways in which psychological resilience helps nascent entrepreneurs become less vulnerable to their stressful circumstances.

Keywords

resilience, nascent, new ventures, cognition, proactivity

Although launching a new venture is challenging for all entrepreneurs (Lanivich, 2015; Stevenson, 1983), it is particularly demanding for nascent entrepreneurs who are burdened with the “liability of newness” when tackling resource constraints, ambiguity, and risks (Politis, 2005; Shepherd, Douglas, & Shanley, 2000). Nascent entrepreneurs' failure rates are high (Reynolds, 2007; Ucbasaran, Shepherd, Lockett, & Lyon, 2013), with half of new ventures failing in the first 5 years (e.g., Headd, 2003; Phillips & Kirschhoff, 1989). The difficulty of coping with these demands takes its toll on entrepreneurs' health and well-being—including rumination, anxiety, and overall negativity—which harms their chances of success (Cocker, Martin, Scott, Venn, & Sandereson, 2012; Kariv, 2008; Schonfeld & Mazzola, 2015). Nascent entrepreneurs therefore require a panacea that can enable them to cope effectively with the many stressors they face.

¹Concordia University, John Molson School of Business, Quebec, Canada

²Queen's University, Smith School of Business, Goodes Hall, Kingston, Ontario, Canada

Corresponding Author:

Ingrid C. Chadwick, Concordia University, John Molson School of Business, 1450 Guy St. Montreal, Quebec H3H 0A1, Canada.

Email: ingrid.chadwick@concordia.ca

To tackle this dilemma, entrepreneurship scholars have embraced the popular concept of *resilience*—that is, the capacity to bounce back from negative emotional experiences and flexibly adapt to the changing demands of stressful experiences (Block & Block, 1980; Block & Kremen, 1996; Carver, 1998; Lazarus, 1993)—and suggested that entrepreneurs will be more successful if they are resilient (Davidsson & Gordon, 2016; Delmar & Shane, 2004; Jenkins, Wiklund, & Brundin, 2014). Unfortunately, despite increased interest in entrepreneurs' resilience, the concept has largely been used as a metaphor rather than a construct of investigation (Fisher, Maritz, & Lobo, 2016). In the few cases where resilience has been empirically studied, scholars have been inconsistent in their conceptualizations, have rarely built upon the burgeoning literature on psychological resilience, and have not dedicated attention to the process through which resilience produces benefits. This fragmented literature and lack of theoretical consensus is problematic. Scholars are not building on each other in ways that can enhance our understanding of resilience and build a theoretically-grounded and coherent body of work informed by insights from related fields. In addition, there is limited knowledge of *how* resilience enables entrepreneurs to cope with challenges more effectively, which hampers our understanding of why resilience is essential for the process of business creation (c.f., Hopp & Sonderegger, 2015).

We address these important problems in this research by developing and testing a theory of how psychological resilience fosters business survival among nascent entrepreneurs over time. Specifically, we integrate Frederickson's (1998, 2001) broaden-and-build theory—which delineates the functional significance of positive emotions—into entrepreneurship research, asserting that entrepreneurs who draw upon their psychological resilience as a personal resource will (a) broaden their cognitive appraisals such that stressors are seen as challenges that can be overcome, (b) build their business more proactively, and thus (c) stay in business over time. We test this theory with a time-lagged study in which we followed first-time entrepreneurs in Canada as they planned, launched, and operated their new ventures. Our research thus offers theoretical coherence to explain the specifics of how psychological resilience enables entrepreneurs to cope more effectively with the stressful circumstances of their first new venture launch, and therefore remain in business.

Theoretical Background and Hypotheses

Psychological Resilience in Nascent Entrepreneurship

We draw from foundational research in psychology to adopt the view of resilience as an individual's relatively stable capacity to bounce back from negative or stressful experiences and flexibly adapt (i.e., an individual difference; Block & Block, 1980; Block & Kremen, 1996; Carver, 1998; Lazarus, 1993). Psychological resilience research originated in developmental and counseling psychology to understand how people overcome adverse life experiences (e.g., Fonagy, Steele, Steele, Higgitt, & Target, 1993; Masten, 2001), but the construct is now studied in a wide array of contexts (e.g., Fisk & Dionisi, 2010; Hmieleski & Carr, 2007, 2008; Seery, Holman, & Silver, 2010; van der Vegt, Essens, & Wahlstrom, 2015). Research has established that psychological resilience has downstream behavioral consequences (Bonanno, 2004; Fletcher & Sarkar, 2013; Seery, Leo, Lupien, Kondrak, & Almonte, 2013), but it is important for resilience to not be equated with these behavioral consequences (e.g., De Vries & Shields, 2006). We believe it is important to adopt this established conceptualization of psychological resilience in entrepreneurship research to build a more coherent body of literature with consistent definitions.¹

Positive emotions are the foundation of individuals' psychological resilience (Tugade & Fredrickson, 2004; Tugade, Fredrickson, & Feldman Barrett, 2004) such that resilient individuals are able to remain optimistic and hopeful (Fisk & Dionisi, 2010; Mak, Ng, & Wong, 2011) and to even improve when they face challenges (Masten, 2001). Accordingly, resilient individuals are better at coping in difficult circumstances due to the way they cognitively appraise stressful events as challenges they can overcome, rather than as debilitating threats (Fletcher & Sarkar, 2013; Mancini & Bonanno, 2009; Tugade & Fredrickson, 2004). Resilient people also engage in more forward-looking and adaptive behaviors when faced with stressors (Folkman, 1997; Masten, 2001; Wanberg, 1997). We thus assert that resilience is an essential personal resource that entrepreneurs can leverage to better interpret and respond to their stressful start-up context.

Scholars have argued that entrepreneurs' individual resilience is necessary to their success during start-up (Davidsson & Gordon, 2016; Politis, 2005; Shepherd et al., 2000; Ucbasaran et al., 2013) but nearly all empirical studies on resilience have looked at its relationship with entrepreneurial intentions, not business success (Bernard & Barbosa, 2016; Bullough & Renko, 2013; Bullough, Renko, & Myatt, 2014; Pérez-López, González-López, & Rodríguez-Ariza, 2016). Three studies have linked entrepreneurs' resilience with success in established businesses (Ayala & Manzano, 2010, 2014; Fisher et al., 2016). However, it is possible that these successful entrepreneurs reflect the pool of resilient individuals who remain after non-resilient nascent entrepreneurs' businesses failed (i.e., sampling on the dependent variable; Berk, 1983). If we seek to answer the question of whether resilience helps entrepreneurs to succeed, it is necessary to study first-time entrepreneurs *before* they launch their businesses and then predict their success. We do this and focus on explaining how resilience influences entrepreneurs' cognitive and behavioral repertoires in a way that helps their businesses to succeed over time, as explained through the broaden-and-build theory.

Broaden-and-Build Theory

Broaden-and-build theory (Fredrickson, 1998, 2001) asserts that when individuals experience positive emotions, their thought-action repertoires are *broadened* in ways that enable them to *build* skills and resources to cope, grow, and even survive. More specifically, positive emotions are theorized to broaden individuals' awareness such that they are better able to flexibly and efficiently draw on higher and more open-minded levels of perceptions (e.g., Fredrickson & Levenson, 1998; Tugade et al., 2004). By broadening ones' cognitive perspective, individuals' arsenal of coping strategies are expanded whereby they become in a better position to behave in more adaptive and proactive ways; these behaviors in turn build resources for their coping abilities in the long run (e.g., Garland et al., 2010; Lin, Kao, Chen, & Lu, 2016). In contrast, negative emotions narrow individuals' attention to specific, short-term and oftentimes automatic action tendencies (e.g., attack, escape), which lead to less constructive coping behaviors (Fredrickson, 1998; Tugade & Fredrickson, 2004). The broaden-and-build theory has generated a strong empirical foundation of support from both laboratory and field studies (e.g., Cohn & Fredrickson, 2009; Garland et al., 2010). In particular, there is fundamental support for the link between various positive emotions and cognitive and behavioral outcomes such as more positive, flexible, and integrative cognition (see review by Isen, 2000), as well as increased activity engagement and adaptability (see review by Fredrickson, 2001). Despite the prominence of and support for this theory in psychology, broaden-and-build has rarely been used in organizational settings (King, Newman, & Luthans, 2016) and only one prior theoretical article has discussed this theory in the context of entrepreneurship (Hayward, Forster, Sarasvathy, & Fredrickson, 2010). In King and colleagues' (2016, p.

784) literature review on resilience, they urged organizational scholars to focus more on broaden-and-build theory because of its great potential to predict and explain the effects of resilience at work.

We believe it is time for broaden-and-build theory to be investigated by entrepreneurship scholars, in line with Hayward and colleagues' (2010) theoretical arguments calling for the integration of this theory into entrepreneurship studies. Since positive emotions are the foundation of individuals' psychological resilience as outlined above (Tugade & Fredrickson, 2004; Tugade et al., 2004), broaden-and-build theory offers an ideal theoretical lens through which we can predict and explain how resilience influences nascent entrepreneurs' thought-action repertoires during business launch. We begin by outlining how resilient entrepreneurs can draw from their positive emotional resources to broaden their cognitions to be more constructive.

Challenge Appraisals: Broadening Perception

Scholars of entrepreneurial cognition—defined here as “the knowledge structures that people use to make assessments, judgments or decisions involving opportunity evaluation and venture creation and growth” (Mitchell et al., 2002, p. 97)—study how entrepreneurs interpret their environments using mental models that either enable or prohibit them from identifying and acting on potential opportunities (Mitchell et al., 2002).² It is increasingly well-accepted that entrepreneurs evaluate and pursue potential opportunities based on their perceptions of the attractiveness of such opportunities compared to their existing resources (Haynie, Shepherd, & McMullen, 2009). Entrepreneurs only take action toward opportunities that their knowledge structures represent as relevant and meaningful (Barreto, 2012). This entrepreneurial cognition literature delineates how entrepreneurs cognitively appraise ambiguous and resource-constrained situations as an opportunity worth exploiting *only* if they see it as a challenge that is desirable and feasible with the knowledge and resources available to them. In other words, entrepreneurs' cognitive appraisals of their circumstances must reflect a belief that it is desirable and feasible to overcome obstacles (i.e., *challenge appraisal*). This view fits with the broader psychological literature on stress and coping in which cognitive appraisals emerge when stressful circumstances are evaluated for meaning and relevance to determine ensuing actions (Lazarus & Folkman, 1984), and challenge appraisals are the most constructive type of cognitive appraisal (e.g., Drach-Zahavy & Erez, 2002; Skinner & Brewer, 2002).

Although challenge appraisals are the most adaptive cognitive response to stressful situations, they are unlikely to emerge unless individuals believe they have what it takes to tackle the situation. We argue that resilience enables individuals to do so. Psychological resilience generates positive emotions such as eagerness, excitement, and happiness (Tugade & Fredrickson, 2004), which, according to broaden-and-build theory, expand individuals' perceptions of how to cope in stressful situations (Fredrickson, 2001). More specifically, positive emotions broaden the scope of individuals' attention to make them more open-minded, constructive, and creative in their perceptions of stressful situations (Fredrickson & Branigan, 2005; Phillips, Bull, Adams, & Fraser, 2002). Building on this, Tugade and Fredrickson (2004) illustrated that resilient individuals are better at regulating their emotional response to adverse situations by viewing them as more challenging and less threatening and by finding greater positive meaning in those situations. We argue that the primary benefit of psychological resilience for nascent entrepreneurs is that it enables them to interpret their entrepreneurial environment as a constructive challenge that they have the capacity to tackle, thereby appraising the situation in a more expansive and

constructive way (Sutcliffe & Vogus, 2003). Resilience thus makes nascent entrepreneurs more likely to interpret their resource-constrained circumstances as feasible and desirable to overcome, consistent with challenge appraisals and the subjective view of cognition (Barreto, 2012; Lazarus & Folkman, 1984). On the other hand, nascent entrepreneurs low in resilience are more likely to perceive the same adverse situation as one that they cannot overcome. Accordingly:

***Hypothesis 1:** Nascent entrepreneurs' resilience is positively related to the likelihood of them having a challenge appraisal of their entrepreneurial circumstances.*

In addition to having important cognitive implications, broaden-and-build theory predicts resilience to also influence nascent entrepreneurs' behavioral repertoire in ways that proactively build the business. We argue that this is a downstream process, whereby resilience will indirectly affect how nascent entrepreneurs behave (i.e., build) as a result of their cognition (i.e., broaden).

Entrepreneurial Proactivity: Building the Business

Entrepreneurial proactivity is entrepreneurs' anticipatory and ongoing behaviors to make improvements to business processes and outcomes (Glaub, Frese, Fischer, & Hoppe, 2014). Scholars have argued that entrepreneurs cannot passively adapt to their environment; to thrive, they need to proactively defend and build their business and market niche continuously (Frese, 2007; Krauss, Frese, Friedrich, & Unger, 2005). The nature of entrepreneurship requires them to go above and beyond day-to-day tasks and think about how to conduct such tasks in more efficient and innovative ways moving forward (e.g., Frese, 2007; Sarasvathy, 2001). By actively adjusting their tasks to their capabilities and environmental demands, entrepreneurs drive change in ways that enable their success rather than merely react to their circumstances.

The existing literature on proactivity has paid little attention to cognitive conditions that facilitate such behaviors (Brinckmann & Kim, 2015). Drawing from broaden-and-build theory—which predicts that when individuals' cognitive repertoires are broadened by positive emotions, they engage in more expansive and future-oriented behaviors (Foo, Uy, & Baron, 2009; Fredrickson, 2001)—we expect entrepreneurs' challenge appraisal to be an important cognitive foundation for their proactive behavior. In particular, we argue that when entrepreneurs interpret their resource constraints as a challenge from which they can benefit, this interpretation motivates them to engage in more proactive behavior as they seek out such a challenge and its potential learning opportunities. In contrast, entrepreneurs who perceive their resource constraints as a burden will instead experience negativity from their constraints, leading to a narrowing of cognition and a focus on immediate demands (Foo et al., 2009), which decreases such future-oriented proactive behavior. This reasoning fits with the motivational mechanisms underpinning proactivity more broadly, whereby scholars have proposed that individuals engage in proactive behavior if they: (a) want to bring about a different future (a “reason to” pathway); (b) feel capable of being proactive (a “can do” pathway); and (c) have positive affect to engage in proactive actions (an “energized to” pathway; Parker, Bindl, & Strauss, 2010). Nascent entrepreneurs want their business to succeed, but only those with a challenge appraisal will take proactive action to continuously improve their business because this appraisal enables them to envision an improved future. Entrepreneurs who interpret their business with a challenge appraisal are thus more motivated to reap the benefits from this opportunity and believe they are capable of doing so; this challenge appraisal in turn

encourages them to engage in more proactive behaviors that will help them in this process. Accordingly:

Hypothesis 2: Nascent entrepreneurs' challenge appraisal of their entrepreneurial circumstances positively influences their proactivity.

Business Survival

We also sought to document proactive behaviors' influence on nascent entrepreneurs' *actual* business survival. Being proactive means anticipating and preparing for problems in a way that enables entrepreneurs to better tackle potential challenges and opportunities (Glaub et al., 2014). Proactive entrepreneurs are thus more likely to continuously create advantageous situations for their business, which in turn makes them more likely to succeed over time as they overcome hurdles to meet their goals (e.g., Frese, 2007; Frese & Fay, 2001). Studies have corroborated these claims by linking different forms of proactive behavior with entrepreneurial success (Diefendorff & Lord, 2004; Krauss et al., 2005). For example, Kickul and Gundry (2002) found that small business owners who were more proactive were more likely to have a strategic orientation for their firms that enabled them to be more innovative and flexible in the face of changing conditions. Similarly, Frese et al. (2007) found that entrepreneurs who were more proactive in planning were more successful as measured by the size of their business as well as an external evaluation by experts. In addition, proactiveness is one of the core components of an Entrepreneurial Orientation, which has been linked to organizational success across studies (see meta-analysis by Rauch, Wiklund, Lumpkin, & Frese, 2009).

We thus assert that nascent entrepreneurs who are proactive in the ways they manage their new ventures are more likely to sustain in entrepreneurship in the long run. According to broaden-and-build theory, individuals who engage in adaptive behaviors are better able to build resources that help them manage future threats; these resources in turn generate long-term benefits (Fredrickson, 2001). We argue that entrepreneurs who are proactive develop relevant skills and resources (e.g., social, financial, and psychological) that better prepare and motivate them toward meeting future demands of their new venture. For example, proactive entrepreneurs are more likely to seek out information about what skills or resources they may be lacking, and are in turn more likely to address those gaps. Nascent entrepreneurs who merely fulfill role requirements without much thought into how they can proactively defend and build their market niche are unlikely to gain resource support, making them more likely to fail (e.g., Frese, 2007; Krauss et al., 2005). Indeed, proactivity is a key behavior that sets apart those nascent entrepreneurs who make it from those who do not. These arguments lead to our third hypothesis:

Hypothesis 3: Nascent entrepreneurs' proactivity increases their chances of business survival.

Mediated Relationships Between Psychological Resilience and Business Survival

Grounded in broaden-and-build theory (Fredrickson, 1998, 2001), we began our theory by asserting that resilience induces positive emotions that broaden nascent entrepreneurs' subjective interpretation of their adverse circumstances. This first path of our model illustrates that entrepreneurs with higher levels of resilience are more likely to have a challenge appraisal of their entrepreneurial environment. Next, this challenge appraisal becomes an important

driver of proactivity. Broaden-and-build theory asserts that individuals respond more constructively to adversity when their thought repertoires have been broadened in positive ways; in our model, this is depicted as entrepreneurs' proactive improvements to their start-up when they view their circumstances as more of a challenge than a threat. This argument accordingly suggests that resilient entrepreneurs are more proactive because of the challenge appraisals they use to interpret their environment. Lastly, we expect proactive entrepreneurs to increase their chances of business success because these behaviors build them resources that make them more adaptable and capable to meet their business needs longitudinally. This last step of resource building is the longitudinal benefit of psychological resilience that ultimately has far reaching benefits for individuals and businesses, such as nascent entrepreneurs' new venture survival here. Collectively, therefore, we argue that resilient entrepreneurs are more likely to stay in business compared to their less resilient counterparts as their resilience enables and motivates them to broaden their cognitive appraisals of stressors (i.e., increased challenge appraisals) and build their business (i.e., increased proactivity) to respond to difficult start-up conditions in more constructive ways. Overall, this hypothesis summarizes the mediated broaden-and-build process:

***Hypothesis 4:** Nascent entrepreneurs' resilience positively influences their chances of business survival as sequentially mediated through their challenge appraisal and proactivity, respectively.*

Methods

Entrepreneurial Context, Participants, and Procedures

The ideal sample to test our hypotheses without the threat of retrospective response and survival biases (Davidsson & Gordon, 2012; Grégoire, Corbett, & McMullen, 2011) is a context in which we obtain access to nascent entrepreneurs and assess their resilience *before* they launch their businesses, followed by tracking their cognitions, behaviors, and business survival over time. We obtained access to such a sample through a partnership with a government-funded entrepreneurship program in Canada for first-time entrepreneurs. Participants are eligible for this program if they are unemployed, have never run their own business, but have an initial business idea from which they may be able to earn a living (yet business ideas are not vetted prior to enrollment). This program is offered through regional program providers and we were able to negotiate access to participants through these providers in 10 geographical regions. Participants attend workshops on how to run a business during the first 1 to 2 months of the program, then they launch the business, followed by progress meetings for them to offer updates regarding the status of their business during the remainder of the program (12 months in total).

To begin the data collection process, we traveled to each of the 10 locations on the first day of the new program. The program administrators at these locations introduced us to the program participants. We then had the opportunity to explain the purpose and process of this research and to invite them to participate by responding to three surveys throughout their year-long participation in this entrepreneurship program. For those who were interested in doing so (approximately 95% of the invitees), the first survey was administered during their first week in the program when they had a business idea but no training or experience (i.e., they were not yet operating their business). The second survey was administered once they had received their formal training and had finalized their business plan and/or launched their business (on average 8 weeks later). At this point, 34% of the participants had launched

their business; the others were in the final steps before launching it. The third and final survey was administered approximately 7 months later, when the participants were in the midst of running their new business. To maximize participation rates, we traveled back to the regional program providers at each data collection time-point to administer the surveys face-to-face. There were, however, participants who were absent during our site visits so we gave participants in this situation the opportunity to fill out an online version of the survey instead. The majority preferred to complete the survey in paper-and-pencil format, namely 96.5% for survey one, 93% for survey two, and 66% for survey three. The online survey format was more popular at Time 3 because the program providers had infrequent meetings at this point while the entrepreneurs worked independently. Participants received \$10 per survey as a token of our appreciation. Finally, 1 year after the completion of the program (i.e., 2 years after the first survey in our study), we obtained business survival data by contacting program administrators who provided this information from their records.

There were 195 participants who responded to survey one, 160 responded to survey two (82% of original sample), and 118 responded to survey three (61% of original sample). A total of 104 participants responded to all three surveys and provided data on all the variables of interest (53% of original sample). These 104 participants comprise the final sample. The demographic distribution of the final sample was 50% men and 87% Caucasian. The average age was 42 years and the participants had an average work experience of 20 years. In terms of education, 63% of the participants had at least a 2-year college degree or higher. The new ventures were quite diverse, including hair salons, lawn mowing, IT consulting services, accounting services, health-care support, yoga studios, and wedding planners, among others.

To ensure the sample of entrepreneurs used for hypothesis testing were no different than those who were excluded due to attrition, we conducted *t* tests on all the variables in our model and demographics. No meaningful difference emerged. We examined whether resilient individuals may have persisted in the study longer. Results showed that the initial ($M = 4.91$) and final samples ($M = 5.00$) were not significantly different on resilience ($t = .74$, $p = .46$), showing no evidence of sampling bias due to attrition. We also compared resilience scores at Time 1 and Time 3 to see if the entrepreneurship program itself may have increased resilience. A paired-samples *t* test showed that participants were no more resilient at Time 3 ($M = 4.96$) than they were at Time 1 ($M = 5.00$; $t = .63$, $p = .53$), alleviating concerns about a possible confounding effect of this program. In summary, there was no evidence that participants in our sample were more resilient than others or that they became more resilient as a function of this program.

Measures

We measured the constructs of interest at four time points to map onto the theorized model, ensure construct validity, and reduce the potential for common method bias (i.e., a time-lagged research model). Specifically, resilience and demographic measures were assessed at Time 1 when the participants had just started the first week of their training program. Cognitive appraisals and resource constraints were measured at Time 2, approximately 2 months later, when they had completed their formal training and business plan and were in the beginning phases of starting their business. At this point, they were aware of the types of constraints they were facing as new entrepreneurs. Proactive behaviors were assessed at Time 3, approximately 7 months later, when they were in the middle of operating their new business. Finally, we collected information about the status of each individual's business (in business or not; i.e., business survival) from program coordinators at Time 4, 1 year later

(i.e., approximately 2 years after the first survey). We elaborate upon these measures in more detail below, but for more information on all the items used, please see Appendix A.

Psychological resilience (Time 1). We administered six items from Wagnild and Young's (1993) resilience scale tailored to the work context, where participants were instructed to consider their entrepreneurial endeavor as their "job" and work context. This validated scale has been used in prior studies focusing on the workplace in general (e.g., Sommer, Howley, & Hadley, 2016) and entrepreneurship in particular (Hmieleski & Carr, 2007, 2008). It is also frequently used in psychological capital research, which encompasses resilience (Luthans, Avolio, Avey, & Norman, 2007). Importantly, scholars have argued that this measure captures resilience as a relatively stable individual difference (Luthans et al., 2007; Peterson, Luthans, Avolio, Walumbwa, & Zhang, 2011). A sample item includes: "I usually take stressful things at work in stride." Participants were asked to respond based on a scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). The coefficient alpha was .69.

Challenge appraisal (Time 2). Eight items from Peacock and Wong's (1990) validated measure of cognitive appraisals of stressors were used to measure participants' challenge appraisal of their business start-up conditions as desirable and feasible (see examples of use in Freeman & Rees, 2009; Johnstone & Feeney, 2015). Challenge appraisal was our focus because it most closely fits with the broaden-and-build tenet of broadened cognition; we did not examine less constructive cognitive appraisals of stressors (e.g., threat). Peacock and Wong's (1990) scale has been argued to be one of only five theoretically-based measures of cognitive appraisals (Carpenter, 2016), and it fits with the subjective view of entrepreneurial cognition (Barreto, 2012; Lazarus & Folkman, 1984). In addition, the items measure *anticipatory* cognitive appraisal where resource losses and harms may not yet have occurred; this makes it particularly relevant for our research where we measured new entrepreneurs' appraisals early on in their start-up process. Participants were asked to consider the challenges that they were facing as part of business start-up and rate their perceptions of this situation on a scale from 1 (*not at all*) to 5 (*extremely*). Example items include: "To what extent can I become a stronger person because of this problem?" and "Do I have what it takes to do well in this situation?" The coefficient alpha for this scale was .87.

Proactivity (Time 3). To measure entrepreneurs' proactive behaviors, we mapped a three-item measure of individuals' task proactivity to the entrepreneurial context (Griffin, Neal, & Parker, 2007). In line with our theoretical conceptualization of proactivity as anticipatory and ongoing behaviors intended to make improvements to business processes and outcomes (Glaub et al., 2014), this measure asked participants to rate the extent to which they engaged in the following type of behaviors over the past 3 months: "I have made proactive changes that have improved the quality of my business." The response scale ranged from 1 (*strongly disagree*) to 5 (*strongly agree*), and the coefficient alpha was .83.

Business survival (Time 4). Entrepreneurs' business survival was operationalized as whether the business was still in operation (coded as 1) or had been closed (coded as 0) 2 years after the first survey and 1 year after the end of the entrepreneurship program. This information was provided by program coordinators who remain in touch with the participants for administrative purposes (e.g., providing the government with status updates).

Covariates. We controlled for participants' gender and age because these demographics may play a role in individuals' cognition and behaviors. Research suggests that female

entrepreneurs are often less successful than males based on their ability to gain financial support and to generate financial performance outcomes in particular (e.g., Fairlie & Robb, 2009). In addition, older individuals have extra human and social capital, which may positively influence how they approach entrepreneurship (Davidsson & Honig, 2003; Dimov & Shepherd, 2005). By virtue of being first-time entrepreneurs hoping for self-employment, the participants in our sample had limited resources. However, to control for whether or not there were variations in resource constraints, we controlled for the participants' reports of their unique resource constraints as these are likely to have a negative effect on their motivation and effort (Hobfoll, 2002). We administered a version of the Organizational Constraints Scale (Spector & Jex, 1998) that was adapted specifically for entrepreneurial constraints. This 13-item scale asked participants "How often do you find it difficult or impossible to do your job because of...?" various constraints relevant to nascent entrepreneurship, including "Lack of funding/capital," "Government regulations," and "Insufficient networks." The coefficient alpha was .84.³

Finally, to alleviate concerns that self-efficacy—rather than resilience—might be driving the results, we included self-efficacy as a covariate. Self-efficacy has been argued to influence individuals' resilience (Benight & Bandura, 2004) and some have even suggested it as a part of resilience (De Vries & Shields, 2006). We differentiate these constructs and agree that research is needed to distinguish resilience from self-efficacy in its impact (King et al., 2016). We used Parker's (1998) validated self-efficacy scale that includes items such as "I feel confident analyzing a long-term problem to find a solution." Participants were asked to respond based on a scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). The coefficient alpha was .82.

Results

The descriptive statistics and correlations between all variables can be seen in Table 1. We evaluated the hypothesized sequential mediation model using Hayes' PROCESS model 6 (Hayes, 2013). This path analytic approach allows researchers to test for multiple mediators linked serially in a causal sequence—including effects on a dichotomous dependent variable—using bootstrapping with maximum likelihood-based logistic regression coefficients.

Table 1. Descriptive Statistics and Correlations.

| Variable | Mean | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|----------------------------------|-------|-------|-------|-------|-------|-------|------|------|--------|------|
| 1. Psychological resilience (T1) | 5.00 | .57 | – | | | | | | | |
| 2. Challenge appraisal (T2) | 4.29 | .61 | .36** | – | | | | | | |
| 3. Proactivity (T3) | 4.02 | .67 | .21* | .35** | – | | | | | |
| 4. Business survival (T4) | .37 | .94 | .07 | –.07 | .19 | – | | | | |
| 5. Gender (T1) | .50 | .50 | –.01 | .19 | .07 | .06 | – | | | |
| 6. Age (T1) | 41.91 | 10.01 | .03 | –.04 | .03 | –.22* | –.08 | – | | |
| 7. Resource constraints (T2) | 1.68 | .61 | –.21 | –.12 | –.06 | .08 | –.12 | –.13 | – | |
| 8. Self-efficacy (T1) | 5.06 | .62 | .43** | .34** | .28** | .04 | .14 | .11 | –.20** | – |
| 9. Marker variable ¹ | 2.32 | .99 | .03 | .06 | .04 | .07 | –.14 | –.01 | –.09 | .20* |

Note. * $p < .05$. ** $p < .01$. $n = 104$. Gender (0 = male, 1 = female), Business survival (0 = no, 1 = yes), T = Time, ¹Marker variable (career motivation for assuming roles) for common method variance (CMV) analyses.

Confirmatory Factor Analyses

Prior to hypothesis testing, we conducted a series of confirmatory factor analyses to ensure that our proposed measures represented distinct constructs. We first ran a three-factor model in which the six items for resilience loaded onto one factor, the eight items for challenge appraisals loaded onto a second factor, and the three items for proactive behavior loaded onto a third factor. Results for this proposed model indicated acceptable fit ($\chi^2 = 179.35$, $df = 116$, $p < .001$; CFI = .90; RMSEA = .07; SRMR = .07), where all items loaded significantly onto their hypothesized factor ($p < .05$). We compared this model against alternatives via Satorra–Bentler Scaled Chi-Square difference test. The hypothesized model fit significantly better than a one-factor model in which all items loaded onto one factor ($\chi^2 = 357.30$, $df = 119$, $p < .001$; CFI = .63; RMSEA = .14; SRMR = .12; $\Delta\chi^2 = 63.91$, $df = 3$, $p < .001$) and also significantly better than a two-factor model in which resilience and challenge appraisals loaded onto one factor and proactive behaviors onto another factor ($\chi^2 = 249.95$, $df = 118$, $p < .001$; CFI = .80; RMSEA = .10; SRMR = .09; $\Delta\chi^2 = 23.22$, $df = 2$, $p < .001$).

Tests of Hypotheses

Results of the PROCESS path logistic regression analyses used for hypothesis testing can be seen in Table 2 and Figure 1. All variables were mean centered to aid with interpretation. Hypothesis 1, which predicted that individuals’ resilience positively influences their challenge appraisals, was supported ($\beta = .30$, $SE = .11$, $p < .001$, CI [.08, .51]). A one unit increase in resilience is associated with a .30 units increase in challenge appraisals. We also found support for Hypothesis 2: individuals’ challenge appraisals were positively and significantly related to proactive behavior more than half a year later ($\beta = .31$, $SE = .11$, $p < .01$, CI [.08, .54]). On average, a one unit increase in entrepreneurs’ challenge appraisals leads to a .31 units increase in their proactivity. Also note that the direct effect of psychological resilience on proactivity was nonsignificant when challenge appraisal was also in the equation ($\beta = .04$,

Table 2. Path Analytical Logistic Regression Results (PROCESS Model 6).

| | Challenge appraisal | | | | Proactivity | | | | Business survival | | | |
|--------------------------|---------------------|-----|------|------|-------------|-----|------|------|-------------------|-----|-------|------|
| | β | SE | LLCI | ULCI | B | SE | LLCI | ULCI | β | SE | LLCI | ULCI |
| <i>Covariates</i> | | | | | | | | | | | | |
| Gender | .19 | .11 | -.03 | .41 | -.00 | .13 | -.25 | .25 | .37 | .48 | -.57 | 1.31 |
| Age | -.00 | .01 | -.02 | .01 | .00 | .01 | -.01 | .01 | -.05* | .02 | -.10 | -.01 |
| Resource constraints | -.02 | .09 | -.20 | .17 | .03 | .11 | -.18 | .24 | .33 | .41 | -.47 | 1.14 |
| Self-efficacy | .20* | .10 | .01 | .40 | .18 | .12 | -.05 | .41 | .14 | .44 | -.73 | 1.01 |
| <i>Model Variables</i> | | | | | | | | | | | | |
| Psychological resilience | .30** | .11 | .08 | .51 | .04 | .13 | -.21 | .30 | .47 | .46 | -.43 | 1.37 |
| Challenge appraisal | | | | | .31** | .11 | .08 | .54 | -.85 | .48 | -1.78 | .08 |
| Proactivity | | | | | | | | | .83* | .37 | .10 | 1.56 |

Note. $N = 104$. Challenge appraisal model: $R^2 = .20$, $F = 5.02$; Proactivity model: $R^2 = .15$, $F = 2.95$; Business survival model: -2 Log likelihood = 116.09, McFadden $R^2 = .11$, Cox and Snell $R^2 = .12$, Nagelkerke $R^2 = .18$; LLCI = lower level confidence interval; ULCI = upper level confidence interval.

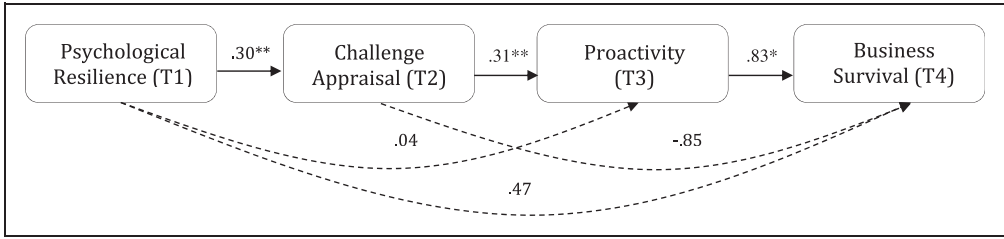


Figure 1. Sequentially mediated path analysis between psychological resilience and business survival.

Note. * $p < .05$. ** $p < .01$. $n = 104$. Depicted values are standardized path coefficients. Four covariates (gender, age, resource constraints, self-efficacy) were included but are not depicted for parsimony. Total indirect effect of psychological resilience on business survival through both sequential mediators: $\beta = .08$; $SE = .07$; $CI [.01, .29]$.

$SE = .13$, ns , $CI [-.21, .30]$), suggesting that resilience has a mediated effect on proactivity through the cognitive broadening process of challenge appraisal, as theorized.

Next, hypothesis 3 was also supported such that individuals' proactivity increased their chances of business survival two years after the start of this study ($\beta = .83$, $SE = .48$, $p < .05$, $CI [.10, 1.56]$). This logistic regression path of the model indicate that a one unit increase in entrepreneurs' proactive behaviors increases the log odds of staying in business by .83, which represents a 129% increase in the odds of business survival ($\text{Exp}(.83) = 2.29$). The summary results of this logistic regression path were as follows: $-2 \text{ Log likelihood} = 116.09$, $\text{McFadden } R^2 = .11$, $\text{Cox and Snell } R^2 = .12$, and $\text{Nagelkerke } R^2 = .18$. Neither psychological resilience ($\beta = .47$, $SE = .46$, ns , $CI [-.42, 1.37]$) nor challenge appraisal ($\beta = -.85$, $SE = .48$, ns , $CI [-1.78, .08]$) had significant direct effects on business survival in this equation; rather, their effects were mediated through proactivity, consistent with the broaden-and-build process.

Finally, the total indirect effect of resilience through the sequential mediators on business survival was tested. In support of Hypothesis 4 and shown in Figure 1, the confidence interval of the bootstrap test of the total indirect effect of both mediators in sequence (challenge appraisal and proactive behaviors) on the relationship between individual resilience at Time 1 and business survival at Time 4 indicated a significant relationship ($\beta = .08$; $SE = .07$; $CI [.01, .29]$). This mediation result suggests that, on average, a one unit increase in resilience will increase the log odds of business survival by .08, or an 8% increase in the odds of staying in business 2 years later ($\text{Exp}(.08) = 1.08$). In summary, all hypotheses were fully supported.⁴

Supplemental Analyses

We assessed alternative models in which resilience produces effects on business survival through only one (but not both) of our hypothesized sequential mediators. Resilience was not significantly related to business survival through either cognition ($\beta = -.25$, $SE = .19$, $CI [-.68, .01]$) or proactive behaviors ($\beta = .04$, $SE = .12$, $CI [-.15, .37]$) alone. Hence, it is only the sequential mediation model that was supported as predicted.

We also evaluated whether the effects were due to resilience specifically or self-efficacy more generally. Specifically, we ruled out the possibility that self-efficacy is an alternative predictor by running the same PROCESS model using self-efficacy as the independent variable. While the pattern of direct effects were similar (albeit weaker at $\beta = .20$), the overall mediation model was nonsignificant ($\beta = .05$, $SE = .06$, $CI [-.01, .30]$), showing that self-efficacy was not related to business survival through these mechanisms, whereas resilience was.

Finally, we also ran an alternative model to evaluate the possibility of reverse causality, such that challenge appraisals or proactivity might later foster resilience. All our variables (except business survival) were measured at both Time 2 and Time 3, so we could test whether proactivity would predict challenge appraisals at Time 2, and whether challenge appraisals would in turn predict resilience at Time 3 (reversal of the front end of our model). There was no support for reverse causality. The only significant path was between proactivity and challenge appraisals (both measured at Time 2, $\beta = .52$, $SE = .12$, $CI [.27, .76]$); challenge appraisals did not predict later resilience ($\beta = .20$, $SE = .11$, $CI [-.01, .41]$), nor was there any support for a direct ($\beta = .27$, $SE = .14$, $CI [-.01, .54]$) or indirect effect ($\beta = .10$, $SE = .09$, $CI [-.04, .32]$). Collectively, these supplemental analyses bolster our assertion that it is through the broaden-and-build process that resilience elicits benefits for nascent entrepreneurs' business survival.

Lastly, we conducted additional analyses to reduce concerns about common method variance (CMV) bias. While we used a time-lagged research model with temporal separation of the independent and mediating variables as well as an objectively measured outcome variable (as commonly used remedies for CMV; Craighead, Ketchen, Dunn, & Hult, 2011), we also conducted recommended post hoc analyses (Richardson, Simmering, & Sturman, 2009; Simmering, Fuller, Richardson, Ocal, & Atinc, 2015). Specifically, we followed Lindell and Whitney's (2001) advice to adjust our correlations for common method bias through the use of a correlational marker technique. We chose the participants' career reason for entering entrepreneurship due to "assuming roles" as our theoretically unrelated marker variable (Carter, Gartner, Shaver, & Gatewood, 2003). Participants were asked "To what extent are the following reasons important to you in establishing your new business?" with three questions about assuming role such as "To continue a family tradition," "To be respected by my friends," and "To follow the example of a person I admire." The response scale was from 1 (*to no extent*) to 5 (*to a very great extent*). These questions were asked in the first survey prior to the participants having started their business and prior to data analyses. After removing the shared variance between the marker and the other variables measured through our surveys, we found the corrected correlations changed by only .018, which suggests that CMV had little influence on our results.

Discussion

Motivated by the central goal of helping nascent entrepreneurs overcome their challenging business start-up conditions to become more successful (Politis, 2005; Shepherd et al., 2000; Ucbasaran et al., 2013), we set out to develop and test theory on the ways in which psychological resilience influences entrepreneurs' chances of business survival. Drawing from an influential positive psychological theory, broaden-and-build theory (Frederickson, 1998, 2001), we integrated its insights with entrepreneurship scholarship to explain the specific cognitive and behavioral mechanisms that emerge during start-ups among psychologically resilient entrepreneurs. Specifically, we first asserted that nascent entrepreneurs with high psychological resilience are better able to appraise their difficult conditions during business launch as challenges that are both desirable and feasible for them to overcome (i.e., broadened cognition). These challenge appraisals then facilitate entrepreneurs' increased proactivity to continuously create advantageous situations for their business (i.e., building behaviorally). This broadened cognition and proactive building of the business ultimately results in a higher likelihood of business survival compared to low-resilience entrepreneurs. We found full support for this theorized model based upon a unique sample of first-time entrepreneurs who we followed as they planned, launched, and operated their first new ventures over a 2-year period.

Theory and Research Implications

Our investigation moved beyond treatments of resilience as merely a metaphor for entrepreneurship (Fisher et al., 2016) and instead established the critical importance of this psychological construct for the creation and survival of new ventures. Perhaps more importantly, our research offers a new way of thinking about resilience in nascent entrepreneurship by illustrating the theoretical process through which it leads to constructive cognitions, behaviors, and subsequent business survival. The nascent entrepreneurship literature has been critiqued for failing to examine psychological processes (Hopp & Sonderegger, 2015); theory was sorely needed to understand how nascent entrepreneurs cope effectively with the challenge of launching their first business. We offered theoretical coherence to the field by integrating and empirically assessing Fredrickson's broaden-and-build theory (1998, 2001) into entrepreneurship research for the first time. Drawing from this foundation, we built an entrepreneurship-specific theory that delineates the role of resilience for nascent entrepreneurs' thought-action repertoires, such that psychological resilience produces positive emotions that can be utilized to maintain a challenge mindset in the face of stressful circumstances. This process of maintaining positivity and a constructive outlook is not easy for entrepreneurs. For example, participants in our sample regularly told us about how starting their new ventures was a daunting task and many felt they barely had enough support to get started. Nevertheless, resilient entrepreneurs mentally focused more strongly on the situation as a challenge they could tackle, and they were able to cognitively reframe the situation as an opportunity they could both manage and benefit from as new entrepreneurs. Because of this, they were in turn more motivated and able to proactively build on their business in ways that allowed them to remain entrepreneurs over time.

Our research not only supports the core tenets of the broaden-and-build theory in an entrepreneurial context (Frederickson, 1998, 2001); it also suggests that this theoretical framework shows great promise in delineating the specific ways in which entrepreneurs can more effectively perceive and operate their businesses. This positive psychological theory offers a novel research direction that supports the value of dedicating greater attention to examining the business survival foundations within entrepreneurs' own psychological make-up and cognitions. Put differently, our research encourages scholars to avoid focusing only on financial and social resources, instead suggesting that we need to look at personal psychological resources and how they engender entrepreneurial cognition and action. The broaden-and-build process describes the core tenets of how thought-action repertoires are expanded when individuals experience positive emotions (Frederickson & Levenson, 1998; Garland et al., 2010; Lin, Kao, Chen, & Lu, 2016; Tugade et al., 2004), but this research is just the beginning. For example, the cognitive broadening process of positivity could be used to explore the ways in which entrepreneurs perceive, appraise, and pursue new opportunities in the broader industry, especially in light of evidence that cognitive broadening is associated with improved creative problem solving (Isen, 1993, 1999). In addition, the core tenet of positivity increasing broadened behavioral repertoires could be used to examine how positive entrepreneurs proactively explore new opportunities through increased change-oriented behaviors (Lin et al., 2016; Shin, Taylor, & Seo, 2012), rather than merely focusing on perfecting their established business strategy. It is possible that the broaden-and-build theoretical process can help to explain the ways in which entrepreneurs seek out and make sense of new opportunities, and when this is most likely to happen, consistent with the goals of entrepreneurial cognition (e.g., Mitchell et al., 2002). Overall, we believe that broaden-and-build offers great potential for informing future theory development and research in the entrepreneurship domain.

This study also strongly supports the importance of entrepreneurial cognition scholarship, highlighting how even distal outcomes (e.g., business still being in operation 2 years later) can

be predicted as a function of how entrepreneurs cognitively assess business conditions at launch. Most entrepreneurial cognition research to date has focused on how entrepreneurs evaluate the situation and choose whether to exploit business opportunities (e.g., Barreto, 2012; McMullen & Shepherd, 2006). Our research embraces the core tenets of entrepreneurial cognition but redirects the attention to how cognitive appraisals affect entrepreneurs *after* they have chosen to exploit a new business opportunity. Put differently, by documenting that entrepreneurs' resilience plays a role in differentiating between entrepreneurs appraising the situation as a challenge they can proactively overcome versus a situation from which they should withdraw, our study responds to scholarly requests for more comprehensive theories that capture the cognitive nuances of entrepreneurs as they maneuver through the early stages of entrepreneurship (Grégoire et al., 2011; Mitchell et al., 2002). We further explicate how this cognitive appraisal influences entrepreneurs' behaviors and business survival, thereby offering better theoretical precision into the micro processes of new venture emergence.

It is also important to note that the effects of resilience held above and beyond the influence of the entrepreneurs' self-efficacy, further adding theoretical coherence to the field and bolstering our claim that psychological resilience provides unique benefits for nascent entrepreneurs staying in business over time. Self-efficacy is one of the most well-researched individual differences in entrepreneurship, since it has positive effects on entrepreneurial intentions, behaviors, and persistence (e.g., Brandstatter, 2011; Cardon & Kirk, 2015; Markman, Balin & Baron, 2002). Self-efficacy has also shown to be open to development, meaning it offers a promising avenue for supporting nascent entrepreneurs to both start and remain in business (e.g., Zhao, Seibert, & Hills, 2005). Our research shows that resilience plays a similar, yet even stronger role for nascent entrepreneurs. We believe it is important for scholars to dedicate greater attention to this individual difference variable above and beyond entrepreneurial self-efficacy and other individual differences. Future research should also investigate whether resilience may be diminished and/or replenished over time with various implications. There is research indicating that entrepreneurs can become more resilient through increased locus of control (Bulmash, 2016) and confidence (Hayward et al., 2010), but further work is needed to understand how entrepreneurs' resilience can be enhanced and/or maintained over time, especially as they maneuver through resource-depleting business situations.

Limitations

There are, of course, limitations associated with this research. Gaining access to a sample of nascent entrepreneurs is challenging and retaining the full sample across a year-long survey data collection process was unrealistic. Of the initial 195 participants who enrolled in the research, we received completed surveys at each time point from a majority. However, evaluation of the theorized process model required us to have complete data from each participant at each time point, resulting in a final sample size of 104 entrepreneurs. Although this is a relatively small sample size, the statistical comparison of participants in the initial and final samples indicated no meaningful differences. Moreover, we did not have any problems with low power to detect effects based upon our sample. The R-squared values of the relationships we examined ranged from 15%–20% (see Table 2); a larger sample would merely have given us additional power that was unnecessary to detect these robust relationships.

Another limitation concerns the reliability of the psychological resilience scale. We administered a validated resilience measure (Wagnild & Young, 1993), which is regularly used as part of a larger multidimensional psychological capital measure (Luthans et al., 2007). The alpha coefficient of .69 fell just short of the .70 value that is often used as a recommendation (Nunnally, 1978), although that "cutoff value" has been misattributed (Lance, Butts, &

Michels, 2006). Low reliability works against the ability of constructs to detect effects so this reliability may have attenuated the observed relationship between resilience and challenge appraisal. Future researchers may nonetheless consider other resilience measures that have been used successfully in an entrepreneurship sample (e.g., Fisher et al., 2016).

An external validity limitation is that our sample may not be representative of the entrepreneurial population as a whole as the means of our variables for resilience, challenge appraisals, and proactivity are relatively high (with relatively low standard deviations). While this may indicate that our sample is somehow unique, studies have found that entrepreneurs are more alike relative to non-entrepreneurs, such that it takes certain attitudes and behaviors to become an entrepreneur (e.g., entrepreneurs are more likely to take risk and to have higher self-efficacy than non-entrepreneurs; Markman et al., 2002; McGrath, MacMillan, & Scheinberg, 1992). Hence, our results indicate that our entrepreneurs are on average prone to interpret their circumstances in positive ways and to engage in more proactive behaviors; these characteristics are likely to make them more representative of other entrepreneurs (rather than less). Still, in light of the training support provided by the program in which our participants were enrolled, we were concerned that our entrepreneurs may represent a more resilient sample than other types of nascent entrepreneurs. We took steps to alleviate this concern, such that we measured resilience *before* the program began (day 1). We also compared these resilience scores of the participants to their resilience scores at the end of the program and found no significant differences. If our sample was nonetheless somehow more resilient than the general population of nascent entrepreneurs, it is important to note that uniformly high resilience scores would produce range restriction, making it more difficult to detect effects. As such, this sample provides a stricter test of the hypothesized relationships and the results may underestimate the influence of resilience. It is still important for future research to replicate these relationships using nascent entrepreneurs with minimal support.

Lastly, while our time-lagged research design gives confidence in our conclusions, it does not allow us to prove causation. We took steps to rule out reverse causality by testing alternative models with recursive relationships that were not supported. Nonetheless, we encourage scholars to incorporate other research designs in the study of resilience for nascent entrepreneurs to be able to draw more definitive conclusions regarding causality. While experimental designs are the only way to truly establish causality, this approach may not be feasible in terms of manipulating resilience. Longitudinal designs in which the applicable variables are measured at each and every time point would be helpful to established support for our hypothesized relationships over longer periods of time.

Practical Implications and Conclusion

One of the important practical implications of our research is that our findings can be used to help inform government initiatives and development programs aimed to stimulate and support job creation for nascent entrepreneurs. Where such entrepreneurship programs exist as a way to foster new venture formation and in some cases reduce unemployment, it can be easy for program administrators and participants to focus heavily on ways to try and increase financial, structural, and/or social resources. Gaining support for one's new venture through these means is indeed beneficial and our results in no way invalidate the importance of these resources, but at the same time, there will never be enough money, structural support, or social support to guarantee success. Our results suggest that the sooner nascent entrepreneurs recognize this and begin to reappraise the

situation cognitively, drawing from their own psychological resilience as a resource, the more likely they will be to proceed as if it is an improvement challenge. Teaching resilience and challenge mindsets early on in such programs would be beneficial to helping an increased number of nascent entrepreneurs stay in business. In addition, we believe that intervention programs that aim to increase resilience can be beneficial for such populations, similar to what has been done by the Penn Resiliency Program for soldiers (see Seligman, 2011). As an alternative approach to helping nascent entrepreneurs increase their chances of business survival, our research also suggests interventions aimed at increasing their proactivity could be very beneficial, especially given that proactivity increased the odds of business survival by 129%!

Ultimately, the results of this research can also be practically beneficial for the psychological well-being of the entrepreneurs themselves. We suspect that most entrepreneurs would be comforted to hear that although every entrepreneur wants many financial, structural, and social resources, they actually have alternative psychological resources from which they can draw to better cope with the challenges of starting up a new business. Through the process of cognitively accepting adversity as a challenge through one can improve, they may leverage their own psychological resilience when such external resources are lacking. Doing so makes them less vulnerable to the contextual circumstances and puts them more in control of the future success of their business.

Appendix A

Measures of Core Constructs

Resilience (Time 1) (Wagnild & Young, 1993)

1 = strongly disagree; 6 = strongly agree

- When I have a setback at work, I have trouble recovering from it, moving on. (R)
- I usually manage difficulties one way or another at work.
- I can be “on my own,” so to speak, at work if I have to.
- I usually take stressful things at work in stride.
- I can get through difficult times at work because I’ve experienced difficulty before.
- I feel I can handle many things at a time at this job.

Challenge appraisal (Time 2) (Peacock & Wong, 1990)

1 = not at all, 5 = extremely

Consider the challenges you are facing as part of starting up your own business (your “current business situation”). Please rate your perceptions of these challenges below:

- Is this going to have a positive impact on me?
- How eager am I to tackle this problem?
- To what extent can I become a stronger person because of this problem?
- To what extent am I excited thinking about the outcome of this situation?
- Do I have the ability to do well in this situation?
- Do I have what it takes to do well in this situation?
- Will I be able to overcome the problem?
- Do I have the skills necessary to achieve a successful outcome to this situation?

Proactivity (Time 3) (Griffin et al., 2007)

1 = strongly disagree; 5 = strongly agree

In the past 3 months:

- I have made continuous improvements to my business.
- I have sought out new and innovative ideas to help my business succeed.
- I have made proactive changes that have improved the quality of my business.

Acknowledgments

Portions of this article were presented at the 2016 annual conference of the Academy of Management. We would like to thank Sharon Parker, Julian Barling, Jacoba Lilius, and Kyle Brykman for their constructive feedback and insightful comments on earlier versions of this paper. We would also like to thank the entrepreneurship training program providers with whom we collaborated to collect data for this research.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: The authors would like to thank the Social Sciences and Humanities Research Council (SSHRC) of Canada and Smith School of Business at Queen's University for their funding that helped to make this research possible.

ORCID iD

Ingrid C. Chadwick  <http://orcid.org/0000-0001-7405-4579>.

Notes

1. Although our focus is on individuals, we recognize and value work that focuses on how social collectives may also exhibit resilience (e.g., enterprise or community resilience; Branzei & Abdelnour, 2010; Williams & Shepherd, 2016).
2. While there are other important ways to study cognition (e.g., the study of entrepreneurs' cognition as a unique phenomenon, or the study of cognition across levels of analyses; see review by Gregoire, Corbett, & McMullen, 2011), we focus on the view of cognition as subjective perceptions of nascent entrepreneurs, as this is more relevant for the individual-level focus of our research on broaden-and-build.
3. Note that participants' prior entrepreneurship experience was controlled through sampling because the program required that all participants have no prior entrepreneurship experience.
4. To ensure consistency of our results, we re-estimated the path analytic models using MPLus and received parallel results showing full support for the hypothesized model.

References

- Ayala, J. C., & Manzano, G. (2010). Established business owners' success: Influencing factors. *Journal of Developmental Entrepreneurship, 15*(3), 263–286.
- Ayala, J. C., & Manzano, G. (2014). The resilience of the entrepreneur. Influence on the success of the business. A longitudinal analysis. *Journal of Economic Psychology, 42*, 126–135.
- Barreto, I. (2012). Solving the entrepreneurial puzzle: The role of entrepreneurial interpretation in opportunity formation and related processes. *Journal of Management Studies, 49*, 356–380.

- Benight, C. C., & Bandura, A. (2004). Social cognitive theory of posttraumatic recovery: The role of perceived self-efficacy. *Behaviour Research and Therapy*, *42*, 1129–1148.
- Berk, R. A. (1983). An introduction to sample selection bias in sociological data. *American Sociological Review*, *48*(3), 386–398.
- Bernard, M., & Barbosa, S. D. (2016). Resilience and entrepreneurship: A dynamic and biographical approach to the entrepreneurial act. *M@N@Gement*, *19*(2), 89–121.
- Block, J. H., & Block, J. (1980). The role of ego-control and ego-resiliency in the origination of behavior. In W. A. Collings (Ed.), *The Minnesota symposia on child psychology*. Hillsdale, NJ: Erlbaum (Vol. 13, pp. 39–101).
- Block, J., & Kremen, A. M. (1996). IQ and ego-resiliency: Conceptual and empirical connections and separateness. *Journal of Personality and Social Psychology*, *70*, 349–361.
- Bonanno, G. A. (2004). Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? *American Psychologist*, *59*(1), 20.
- Brandstatter, H. (2011). Personality aspects of entrepreneurship: A look at five meta-analyses. *Personality and Individual Differences*, *51*(3), 222–230.
- Branzei, O., & Abdelnour, S. (2010). Another day, another dollar: Enterprise resilience under terrorism in developing countries. *Journal of International Business Studies*, *41*(5), 804–825.
- Brinckmann, J., & Kim, S. M. (2015). Why we plan: The impact of nascent entrepreneurs' cognitive characteristics and human capital on business planning. *Strategic Entrepreneurship Journal*, *9*, 153–166.
- Bullough, A., & Renko, M. (2013). Entrepreneurial resilience during challenging times. *Business Horizons*, *56*, 343–350.
- Bullough, A., Renko, M., & Myatt, T. (2014). Danger zone entrepreneurs: The importance of resilience and self-efficacy for entrepreneurial intentions. *Entrepreneurship Theory and Practice*, *38*, 473–499.
- Bulmash, B. (2016). Entrepreneurial resilience: Locus of control and well-being of entrepreneurs. *Journal of Entrepreneurship and Organization Management*, *5*(171), 2.
- Cardon, M. S., & Kirk, C. P. (2015). Entrepreneurial passion as mediator of the self-efficacy to persistence relationship. *Entrepreneurship Theory and Practice*, *39*(5), 1027–1050.
- Carpenter, R. (2016). A review of instruments on cognitive appraisal of stress. *Archives of Psychiatric Nursing*, *30*(2), 271–279.
- Carter, N. M., Gartner, W. B., Shaver, K. G., & Gatewood, E. J. (2003). The career reasons of nascent entrepreneurs. *Journal of Business Venturing*, *18*, 13–29.
- Carver, C. S. (1998). Resilience and thriving: Issues, models and linkages. *Journal of Social Issues*, *54*, 245–266.
- Cocker, F., Martin, A., Scott, J., Venn, A., & Sanderson, K. (2012). Psychological distress and related work attendance among small-to-medium enterprise owner/managers: literature review and research agenda. *International Journal of Mental Health Promotion*, *14*(4), 219–236.
- Cohn, M. A., & Fredrickson, B. L. (2009). *Positive emotions*. *Oxford handbook of positive psychology*. (Vol. 2, pp. 13–24). London: Oxford university press.
- Craighead, C. W., Ketchen, D. J., Dunn, K. S., & Hult, G. T. M. (2011). Addressing common method variance: Guidelines for survey research on information technology, operations, and supply chain management. *IEEE Transactions on Engineering Management*, *58*(3), 578–588.
- Davidsson, P., & Gordon, S. R. (2012). Panel studies of new venture creation: A methods-focused review and suggestions for future research. *Small Business Economics*, *39*, 853–876.
- Davidsson, P., & Gordon, S. R. (2016). Much ado about nothing? The surprising persistence of nascent entrepreneurs through macroeconomic crisis. *Entrepreneurship Theory and Practice*, *40*(4), 915–941.
- Davidsson, P., & Honig, B. (2003). The role of social and human capital among nascent entrepreneurs. *Journal of Business Venturing*, *18*(3), 301–331.
- De Vries, H., & Shields, M. (2006). Towards a theory of entrepreneurial resilience: A case study analysis of New Zealand SME owner operators. *New Zealand Journal of Applied Business Research*, *5*(1), 33–43.

- Delmar, F., & Shane, S. (2004). Legitimizing first: Organizing activities and the survival of new ventures. *Journal of Business Venturing, 19*(3), 385–410.
- Diefendorff, J. M., & Lord, R. G. (2004). The volitional and strategic effects of planning on task performance and goal commitment. *Human Performance, 16*, 365–387.
- Dimov, D. P., & Shepherd, D. A. (2005). Human capital theory and venture capital firms: Exploring “home runs” and “strike outs”. *Journal of Business Venturing, 20*(1), 1–21.
- Drach-Zahavy, A., & Erez, M. (2002). Challenge versus threat effects on the goal–performance relationship. *Organizational Behavior and Human Decision Processes, 88*(2), 667–682.
- Fairlie, R. W., & Robb, A. M. (2009). Gender differences in business performance: Evidence from the characteristics of business owners survey. *Small Business Economics, 33*, 375–395.
- Fiedler, K. (2001). Affective influences on social information processing. In J. P. Forgas (Ed.), *The handbook of affect and social cognition* (pp. 163–185). Mahwah, NJ: Erlbaum.
- Fisher, R., Maritz, A., & Lobo, A. (2016). Does individual resilience influence entrepreneurial success? *Academy of Entrepreneurship Journal, 22*(2), 39.
- Fisk, G. M., & Dionisi, A. M. (2010). Building and sustaining resilience in organizational settings: The critical role of emotion regulation. *Research on Emotion in Organizations, 6*, 167–188.
- Fletcher, D., & Sarkar, M. (2013). Psychological resilience. A review and critique of definitions, concepts, and theory. *European Psychologist, 18*, 12–23.
- Folkman, S. (1997). Positive psychological states and coping with severe stress. *Social Science & Medicine, 45*(8), 1207–1221.
- Fonagy, P., Steele, M., Steele, H., Higgitt, A., & Target, M. (1993). The Emanuel Miller Memorial Lecture 1992: The theory and practice of resilience. *Journal of Child Psychology and Psychiatry, 35*, 231–237.
- Foo, M. D., Uy, M. A., & Baron, R. A. (2009). How do feelings influence effort? An empirical study of entrepreneurs’ affect and venture effort. *Journal of Applied Psychology, 94*(4), 1086.
- Fredrickson, B. L., & Branigan, C. (2005). Positive emotions broaden the scope of attention and thought–action repertoires. *Cognition and Emotion, 19*, 313–332.
- Fredrickson, B., & Levenson, R. W. (1998). Positive emotions speed recovery from the cardiovascular sequelae of negative emotions. *Cognition and Emotion, 12*, 191–220.
- Fredrickson, B. L. (1998). What good are positive emotions?. *Review of General Psychology, 2*, 300–319.
- Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist, 56*(3), 218.
- Freeman, P., & Rees, T. (2009). How does perceived support lead to better performance? An examination of potential mechanisms. *Journal of Applied Sport Psychology, 21*(4), 429–441.
- Frese, M., & Fay, D. (2001). 4. Personal initiative: An active performance concept for work in the 21st century. *Research in Organizational Behavior, 23*, 133–187.
- Frese, M., Krauss, S. I., Keith, N., Escher, S., Grabarkiewicz, R., Luneng, S. T., . . . Friedrich, C. (2007). Business owners’ action planning and its relationship to business success in three African countries. *Journal of Applied Psychology, 92*, 1481–1498.
- Frese, M. (2007). The psychological actions and entrepreneurial success: An action theory approach. In J. R. Baum, M. Frese & R. A. Baron (Eds.), *The psychology of entrepreneurship* (pp. 151–188). Mahwah, NJ: Lawrence Erlbaum Associates.
- Garland, E. L., Fredrickson, B., Kring, A. M., Johnson, D. P., Meyer, P. S., & Penn, D. L. (2010). Upward spirals of positive emotions counter downward spirals of negativity: Insights from the broaden-and-build theory and affective neuroscience on the treatment of emotion dysfunctions and deficits in psychopathology. *Clinical Psychology Review, 30*(7), 849–864.
- Glaub, M. E., Frese, M., Fischer, S., & Hoppe, M. (2014). Increasing personal initiative in small business managers or owners leads to entrepreneurial success: A theory-based controlled randomized field intervention for evidence-based management. *Academy of Management Learning & Education, 13*(3), 354–379.
- Grégoire, D. A., Corbett, A. C., & McMullen, J. S. (2011). The cognitive perspective in entrepreneurship: An agenda for future research. *Journal of Management Studies, 48*, 1443–1477.

- Griffin, M. A., Neal, A., & Parker, S. K. (2007). A new model of work role performance: Positive behavior in uncertain and interdependent contexts. *Academy of Management Journal*, *50*(2), 327–347.
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Retrieved from <http://afhayes.com/introduction-to-mediation-moderation-and-conditional-process-analysis.htm>
- Haynie, J. M., Shepherd, D. A., & McMullen, J. S. (2009). An opportunity for me? The role of resources in opportunity evaluation decisions. *Journal of Management Studies*, *46*, 337–361.
- Hayward, M. L. A., Forster, W. R., Sarasvathy, S. D., & Fredrickson, B. L. (2010). Beyond hubris: How highly confident entrepreneurs rebound to venture again. *Journal of Business Venturing*, *25*, 569–578.
- Headd, B. (2003). Redefining business success: Distinguishing between closure and failure. *Small Business Economics*, *21*, 51–61.
- Hmieleski, K. M., & Carr, J. C. (2007). The relationship between entrepreneur psychological capital and well-being. *Frontiers of Entrepreneurship Research*, *27*, 3.
- Hmieleski, K. M., & Carr, J. C. (2008). The relationship between entrepreneur psychological capital and new venture performance. *Frontiers of Entrepreneurship Research*, *28*, 4.
- Hobfoll, S. E. (2002). Social and psychological resources and adaptation. *Review of General Psychology*, *6*, 307–324.
- Hopp, C., & Sonderegger, R. (2015). Understanding the dynamics of nascent entrepreneurship—pre-start-up experience, intentions, and entrepreneurial success. *Journal of Small Business Management*, *53*(4), 1076–1096.
- Isen, A. M. (1993). Positive affect and decision making. In M. Lewis & J. Haviland (Eds.), *Handbook of emotion* (pp. 261–277). New York, NY: Guilford Press.
- Isen, A. M. (1999). On the relationship between affect and creative problem solving. *Affect, Creative Experience, and Psychological Adjustment*, *3*, 17.
- Isen, A. M. (2000). Positive affect and decision making. In M. Lewis & J. M. Haviland-Jones (Eds.), *Handbook of emotions* (2nd., pp. 417–435). New York, NY: Guilford Press.
- Jenkins, A. S., Wiklund, J., & Brundin, E. (2014). Individual responses to firm failure: Appraisals, grief, and the influence of prior failure experience. *Journal of Business Venturing*, *29*(1), 17–33.
- Johnstone, M., & Feeney, J. A. (2015). Individual differences in responses to workplace stress: The contribution of attachment theory. *Journal of Applied Social Psychology*, *45*(7), 412–424.
- Kariv, D. (2008). The relationship between stress and business performance among men and women entrepreneurs. *Journal of Small Business and Entrepreneurship*, *21*, 449–476.
- Kickul, J., & Gundry, L. (2002). Prospecting for strategic advantage: The proactive entrepreneurial personality and small firm innovation. *Journal of Small Business Management*, *40*(2), 85–97.
- King, D. D., Newman, A., & Luthans, F. (2016). Not if, but when we need resilience in the workplace. *Journal of Organizational Behavior*, *5*(37), 782–786.
- Krauss, S. I., Frese, M., Friedrich, C., & Unger, J. (2005). Entrepreneurial orientation and success: A psychological model of success in Southern African small scale business owners. *European Journal of Work and Organizational Psychology*, *14*, 315–344.
- Lance, C. E., Butts, M. M., & Michels, L. C. (2006). The sources of four commonly reported cutoff criteria: What did they really say? *Organizational Research Methods*, *9*, 202–220.
- Lanivich, S. E. (2015). The RICH entrepreneur: Using conservation of resources theory in contexts of uncertainty. *Entrepreneurship Theory and Practice*, *39*, 863–894.
- Lazarus, R. S. (1993). From psychological stress to the emotions: A history of changing outlooks. *Annual Review of Psychology*, *44*, 1–21.
- Lazarus, R. S., & Folkman, S. (1984). Coping and adaptation. In W. D. Gentry (Ed.), *The handbook of behavioral medicine* (pp. 282–325). New York, NY: Guilford Press.
- Lin, C., Kao, Y., Chen, Y., & Lu, S. (2016). Fostering change-oriented behaviors: A Broaden-and-Build Model. *Journal of Business & Psychology*, *31*(3), 399–414.
- Lindell, M. K., & Whitney, D. J. (2001). Accounting for common method variance in cross-sectional research designs. *Journal of Applied Psychology*, *86*(1), 114.

- Luthans, F., Avolio, B. J., Avey, J. B., & Norman, S. M. (2007). Positive psychological capital: Measurement and relationship with performance and satisfaction. *Personnel Psychology, 60*, 541–572.
- Mak, W. W. S., Ng, I. S. W., & Wong, C. C. Y. (2011). Resilience: Enhancing well-being through the positive cognitive triad. *Journal of Counseling Psychology, 58*, 610–617.
- Mancini, A. D., & Bonanno, G. A. (2009). Predictors and parameters of resilience to loss: Toward an individual differences model. *Journal of Personality, 77*(6), 1805–1832.
- Markman, G. D., Balkin, D. B., & Baron, R. A. (2002). Inventors and new venture formation: The effects of general self-efficacy and regretful thinking. *Entrepreneurship Theory and Practice, 27*(2), 149–165.
- Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist, 56*, 227–238.
- McGrath, R. G., MacMillan, I. C., & Scheinberg, S. (1992). Elitists, risk-takers, and rugged individualists? An exploratory analysis of cultural differences between entrepreneurs and non-entrepreneurs. *Journal of Business Venturing, 7*(2), 115–135.
- McMullen, J. S., & Shepherd, D. A. (2006). Entrepreneurial action and the role of uncertainty in the theory of the entrepreneur. *Academy of Management Review, 31*, 132–152.
- Mitchell, R. K., Busenitz, L. W., Lant, T., McDougall, P. P., Morse, E. A., & Smith, B. (2002). Entrepreneurial cognition theory: Rethinking the people side of entrepreneurship research. *Entrepreneurship Theory and Practice, 27*, 93–104.
- Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). New York, NY: McGraw-Hill.
- Parker, S. K., Bindl, U. K., & Strauss, K. (2010). Making things happen: A model of proactive motivation. *Journal of Management, 36*, 827–856.
- Parker, S. K. (1998). Enhancing role breadth self-efficacy: the roles of job enrichment and other organizational interventions. *Journal of Applied Psychology, 83*(6), 835.
- Peacock, E. J., & Wong, P. T. (1990). The Stress Appraisal Measure (SAM): A multidimensional approach to cognitive appraisal. *Stress Medicine, 6*, 227–236.
- Pérez-López, M. C., González-López, M. J., & Rodríguez-Ariza, L. (2016). Competencies for entrepreneurship as a career option in a challenging employment environment. *Career Development International, 21*(3), 214–229.
- Peterson, S. J., Luthans, F., Avolio, B. J., Walumbwa, F. O., & Zhang, Z. (2011). Psychological capital and employee performance: A latent growth modeling approach. *Personnel Psychology, 64*, 427–450.
- Phillips, B., & Kirchoff, B. A. (1989). Formation, growth and survival; Small firm dynamics in the U.S. economy. *Small Business Economics, 1*, 65–74.
- Phillips, L. H., Bull, R., Adams, E., & Fraser, L. (2002). Positive mood and executive function evidence from stroop and fluency tasks. *Emotion, 2*(1), 12–22.
- Politis, D. (2005). The process of entrepreneurial learning: A conceptual framework. *Entrepreneurship Theory and Practice, 29*(4), 399–424.
- Rauch, A., Wiklund, J., Lumpkin, G. T., & Frese, M. (2009). Entrepreneurial orientation and business performance: An assessment of past research and suggestions for the future. *Entrepreneurship Theory and Practice, 33*(3), 761–787.
- Reynolds, P. D. (2007). *Entrepreneurship in the United States*. New York, NY: Springer.
- Richardson, H. A., Simmering, M. J., & Sturman, M. C. (2009). A tale of three perspectives examining post hoc statistical techniques for detection and correction of common method variance. *Organizational Research Methods, 12*(4), 762–800.
- Sarasvathy, S. (2001). Causation and effectuation: Towards a theoretical shift from economic inevitability to entrepreneurial contingency. *Academy of Management Review, 26*, 243–288.
- Schonfeld, I. S., & Mazzola, J. J. (2015). A qualitative study of stress in individuals self-employed in solo businesses. *Journal of Occupational Health Psychology, 20*(4), 501–513.
- Seery, M. D., Holman, E. A., & Silver, R. C. (2010). Whatever does not kill us: Cumulative lifetime adversity, vulnerability, and resilience. *Journal of Personality and Social Psychology, 99*, 1025–1041.

- Seery, M. D., Leo, R. J., Lupien, S. P., Kondrak, C. L., & Almonte, J. L. (2013). An upside to adversity? Moderate cumulative lifetime adversity is associated with resilient responses in the face of controlled stressors. *Psychological Science, 24*(7), 1181–1189.
- Seligman, M. E. P. (2011). Building resilience. *Harvard Business Review, 89*(4), 100–106.
- Shepherd, D. A., Douglas, E. J., & Shanley, M. (2000). New venture survival: Ignorance, external shocks, and risk reduction strategies. *Journal of Business Venturing, 15*(5–6), 393–410.
- Shin, J., Taylor, M. S., & Seo, M. G. (2012). Resources for change: The relationships of organizational inducements and psychological resilience to employees' attitudes and behaviors toward organizational change. *Academy of Management Journal, 55*, 727–748.
- Simmering, M. J., Fuller, C. M., Richardson, H. A., Ocal, Y., & Atinc, G. M. (2015). Marker variable choice, reporting, and interpretation in the detection of common method variance: A review and demonstration. *Organizational Research Methods, 18*(3), 473–511.
- Skinner, N., & Brewer, N. (2002). The dynamics of threat and challenge appraisals prior to stressful achievement events. *Journal of Personality and Social Psychology, 83*(3), 678.
- Sommer, S. A., Howell, J. M., & Hadley, C. N. (2016). Keeping positive and building strength: The role of affect and team leadership in developing resilience during an organizational crisis. *Group & Organization Management, 41*, 172–202.
- Spector, P. E., & Jex, S. M. (1998). Development of four self-report measures of job stressors and strain: Interpersonal conflict at work scale, organizational constraints scale, quantitative workload inventory, and physical symptoms inventory. *Journal of Occupational Health Psychology, 3*, 356–367.
- Stevenson, H. H. (1983). A new paradigm for entrepreneurial management. In J. J. Kao & H. H. Stevenson (Eds.), *Entrepreneurship: What it is and how to teach it* (pp. 30–61). Boston, MA: Harvard Business School.
- Sutcliffe, K. M., & Vogus, T. (2003). Organizing for resilience. In K. S. Cameron, J. E. Dutton & R. E. Quinn (Eds.), *Positive organizational scholarship* (pp. 94–110). San Francisco, CA: Berrett-Koehler.
- Tugade, M. M., & Frederickson, B. L. (2004). Resilient individuals use positive emotions to bounce back from negative emotional experiences. *Journal of Personality and Social Psychology, 86*, 320–333.
- Tugade, M. M., Fredrickson, B. L., & Feldman Barrett, L. (2004). Psychological resilience and positive emotional granularity: Examining the benefits of positive emotions on coping and health. *Journal of Personality, 72*(6), 1161–1190.
- Ucbasaran, D., Shepherd, D. A., Lockett, A., & Lyon, S. J. (2013). Life after business failure: The process and consequences of business failure for entrepreneurs. *Journal of Management, 39*, 163–202.
- Van der Veegt, G. S., Essens, P., & Wahlstrom, M. (2015). From the editors: Managing risk and resilience. *Academy of Management Journal, 58*, 971–980.
- Wagnild, G., & Young, H. M. (1993). Development and psychometric evaluation of the resilience scale. *Journal of Nursing Measurement, 1*, 165–178.
- Wanberg, C. R. (1997). Antecedents and outcomes of coping behaviors among unemployed and reemployed individuals. *Journal of Applied Psychology, 82*(5), 731.
- Williams, T. A., & Shepherd, D. A. (2016). Building resilience or providing sustenance: Different paths of emergent ventures in the aftermath of the Haiti earthquake. *Academy of Management Journal, 59*(6), 2069–2102.
- Zhao, H., Seibert, S. E., & Hills, G. E. (2005). The mediating role of self-efficacy in the development of entrepreneurial intentions. *Journal of Applied Psychology, 90*(6), 1265.

Author Biography

Ingrid C. Chadwick is an Associate Professor in Management at the John Molson School of Business, Concordia University.

Jana L. Raver is E. Marie Shantz Professor of Organizational Behavior at Smith School of Business, Queen's University.