THE RELATIONSHIP BETWEEN HUMAN CAPITAL, NEW VENTURE IDEAS AND OPPORTUNITY BELIEFS: A META-ANALYSIS

ABSTRACT

We meta-analyze the structural relationship between human capital, the ability to generate new venture ideas and the favorability of opportunity beliefs to address divergent theoretical predictions and inconsistent empirical findings. We test a two-stage process model of entrepreneurial opportunity identification, distinguishing between the ability to generate new venture ideas and the favorability of 3rd and 1st-person opportunity beliefs. We also distinguish between two categories of human capital: general and specific human capital. Our results suggest that general and specific human capital are positively associated with the ability to generate new venture ideas. Furthermore, only specific human capital matters in influencing the favorability of opportunity beliefs, yet the ability to generate new venture ideas is far more important than human capital for the favorability of opportunity beliefs.

Keywords: Opportunity identification; ability to generate new venture ideas; favorability of 1st-person opportunity beliefs; favorability of 3rd-person opportunity beliefs; human capital; meta-analysis.

1. INTRODUCTION

The relationship between human capital and the favorability of entrepreneurial opportunities has been investigated extensively in the entrepreneurship literature. This relationship is a key exemplar of the individual-opportunity nexus perspective that asserts that entrepreneurship as a process is the result of interactions between individuals' attributes and opportunities (e.g. Scheaf, Loignon, Webb, Heggestad, & Wood, 2020; Shane & Venkatraman, 2000). Theoretically, this relationship has been informed, on the one hand, by perspectives such as Austrian economics (Hayek, 1945; Kirzner, 1973) and the resource- and knowledge-based views (Alvarez & Busenitz, 2001; Foss & Foss, 2008) that predict a positive relationship. On the other hand, cognitive theories (e.g. Dane, 2010; Shepherd, McMullen, & Ocasio, 2017) predict a more complicated and nuanced relationship (Dane, 2010; Sleptsov & Anand, 2008; Wood & Williams, 2014). In this study we focus on human capital theory since human capital plays a central role in the entrepreneurial process and is an attribute often used by investors to evaluate the potential of a new venture (Marvel, Davis, & Sproul, 2016).

From a theoretical perspective, the principal relationship studied here is interesting, given that human capital theory predicts a positive relationship between human capital and both the number and the *favorability* (from unfavorable to favorable as judged by the focal individual) of opportunities (Dimov, 2010; Gruber, MacMillan, & Thompson, 2012). However, cognitive theorists have argued that there is a "down side" to human capital, especially when human capital has been acquired through learning by doing, which may lead to mental ruts (Fiske & Taylor, 1991) or knowledge corridors (Ronstadt, 1988). Cognitive entrenchment from mental ruts or knowledge corridors makes it difficult for experienced individuals to use their creativity, and could hamper the individual's identification and assessment of the favorability of

opportunities not related to their human capital (Shepherd & DeTienne, 2005; Venkataraman, 1997). Consequently, the relationship between human capital and the favorability of entrepreneurial opportunities may not be as obvious as previously assumed.

Although human capital - defined as the knowledge, experience, and skills that individuals bring to bear when they set out to perform a task (Dimov, 2010) - is often used as a monolithic concept, the literature distinguishes between general human capital (GHC) and specific human capital (SHC) (Becker, 1965). GHC refers to overall education and work experience and can be adapted to different contexts, whereas SHC pertains to experience that is applicable mainly to a specific activity or context (Gimeno, Folta, Cooper, & Woo, 1997). A recent review of entrepreneurship research on human capital concluded that GHC and SHC "are of unequal value when considering different phases, or milestones, along the entrepreneurial process… some findings suggest that aspects of human capital can also hinder venture milestones such as opportunity discovery" which "illustrates the need for more carefully constructed studies that fully investigate dimensions of human capital specific to milestones along the process" (Marvel et al., 2016, p. 619).

Empirically, studies that differentiate between GHC and SHC and their constituent dimensions report conflicting results. With regard to GHC and its relationship to the favorability of opportunities, most studies report positive or inconclusive findings (e.g., Dimov, 2010; Marvel & Lumpkin, 2017; Ucbasaran, Westhead, & Wright, 2008). However, other studies find that GHC is negatively associated with the favorability of opportunities (e.g., Dimov, 2010; Marvel, 2013). With regard to SHC, several studies emphasize the importance of SHC for assessing the favorability of opportunities (e.g., Haynie, Shepherd, & McMullen, 2009; Shepherd & DeTienne, 2005; Williams & Wood, 2015; Wood & Williams, 2014), whereas other studies

report a negative association (e.g., Dimov, 2010; Gruber, Kim, & Brinckmann, 2015; Prandelli, Pasquini, & Verona, 2016). The reasons for these inconsistent empirical findings may be traced to varying conceptualizations of human capital (Marvel et al., 2016) and opportunities (Davidsson, 2015), a lack of clarity on construct operationalization (Suddaby, 2010) on either side of the individual-opportunity nexus, different contexts (Alvarez & Barney, 2007), or different research designs (Grégoire, Shepherd, & Lambert, 2010).

We seek to clarify these inconsistent theoretical predictions and empirical findings by using a three-pronged approach to address the following question: how is human capital associated with the formation and favorability of entrepreneurial opportunity beliefs? First, we differentiate between GHC and SHC, the two principal types of human capital. Second, we distinguish among three important yet distinct concepts in the formation of opportunities: new venture ideas, 3rd-person opportunity beliefs, and 1st-person opportunity beliefs. A new venture idea represents a preliminary and mostly incomplete mental image (Vogel, 2017) of a value proposition, an unmet customer need or a specific customer segment, or a resource/capability, or a combination of these (e.g. Abell, 1980; Davidsson, 2015). A 3rd-person opportunity belief refers to the individual's subjective evaluation of a new venture idea based on the potentially favorable or unfavorable outcomes the individual envisions for someone from launching an imagined venture in a particular context (Haynie et al., 2009; McMullen & Shepherd, 2006). A 1st-person opportunity belief is the extent to which individuals believe the new venture idea to be personally attractive and worth pursuing themselves given their overall appraisal, the expected personal gains or losses, and the perceived personal feasibility and desirability of the new venture idea (McMullen & Shepherd, 2006; Scheaf et al., 2020). And third, we propose a two-stage process model of entrepreneurial opportunity identification (EOI) that distinguishes

between a creative stage and an elaboration stage of EOI. EOI is initiated by a *creative stage* in which an individual, using his or her human capital, is able to generate new venture ideas (ideation), followed by an *elaboration stage* in which the potential entrepreneur becomes confident (or not) in his or her belief that some of the venture ideas represent a favorable opportunity for someone or for the individual to exploit (Dimov, 2007; Vogel, 2017).

Several meta-analyses have studied the relationships between human capital and entrepreneurial success (Unger, Rauch, Frese, & Rosenbusch, 2011), financial performance (Crook, Todd, Combs, Woehr, & Ketchen, 2011), entrepreneurship perceptions and outcomes (Martin, McNally, & Kay, 2013), entrepreneurial intentions (Bae, Qian, Miao, & Fiet, 2014), and business planning (Brinckmann, Dew, Read, Mayer-Haug, & Grichnik, 2019). This meta-analysis differs from previous ones in that unlike Unger et al. (2011) and Crook et al. (2011) it focuses on the early stage of the entrepreneurial process. While Bae et al. (2014) and Martin et al. (2013) study how entrepreneurship education is associated with entrepreneurial intentions and perceptions of entrepreneurship, we focus on the link between human capital and the degree to which individuals' beliefs about specific new venture ideas are favorable or unfavorable. Our results indicate that both GHC and SHC are important to an individual's ability to generate new venture ideas, but that only SHC is important in assessing the favorability of 1st-person opportunity beliefs. While the effect sizes are small, they have important implications for theory development and practice.

We make two important contributions to the entrepreneurship literature. First, we draw on and integrate literature streams on the role of human capital in entrepreneurial ideation and opportunity belief formation, respectively, to theorize how new venture ideas come about and why some of them are believed to be favorable entrepreneurial opportunities for someone or for

the focal individual to act on. Second, we reconcile contradictory findings of prior studies by distinguishing between different types and conceptualizations of human capital and two stages of the EOI process that comprise two different types of opportunity beliefs. In so doing, we clarify that the value of GHC and SHC differs across the two stages of the EOI process. We also compare and contrast the role of human capital in the opportunity identification process with the impact it has on other stages of the entrepreneurial process.

2. CONCEPTUAL MODEL AND HYPOTHESES

We draw on Dimov (2007), Wood and McKinley (2010), and Vogel (2017) to conceive of a model of EOI that consists of two stages, a creative and an elaboration stage. While this conceptualization corresponds to the dominant view in this research stream (McMullen & Shepherd, 2006; Vogel, 2017), we acknowledge that other routes exist (Bhave, 1994; Shah & Tripsas, 2007). EOI starts with the creative stage in which individuals engage in entrepreneurial ideation by leveraging their human capital, among other resources. In other words, in this stage an individual's human capital engenders his or her *ability to generate new venture ideas*. Following the creative stage, EOI continues with the elaboration stage in which individuals form *beliefs*[1] about whether some of the new venture ideas represent opportunities (Grégoire et al., 2010; Shepherd, McMullen, & Jennings, 2007). In the elaboration stage, individuals with new venture ideas (which are themselves incomplete mental images) engage in sensemaking processes that consist of *search*, *noticing*, and *interpretation* of opportunity-relevant data that is used to complete the mental image of the new venture idea (e.g. Weick, 1995; Wood & McKinley, 2010).

[1] To be clear, in our conceptual framework we deal with individuals' beliefs about opportunities rather than opportunities per se (Davidsson, 2015).

Some of the new venture ideas that are subjected to sensemaking will eventually coalesce into favorable or less favorable *opportunity beliefs*, which are formed when the individual's mental representation associated with new venture ideas, enriched and completed by the interpretation of sensory information, coheres with or differs from the individual's mental model of an opportunity (Baron & Ensley, 2006; McMullen & Shepherd, 2006). A mental model of an opportunity is "a cognitive representation of an ideal business opportunity composed of the attributes an individual has found to be most desirable and predictive of success" (Mueller & Shepherd, 2016, p. 463; also see Baron & Ensley, 2006). The EOI process as described here bears some similarities but also differences with the idea journey process—idea generation, idea elaboration, idea championing, and idea implementation—proposed in an earlier study (Perry-Smith & Mannucci, 2017). Specifically, the idea generation phase refers to the generation of *a* useful and new idea, which is different from an individual's ability to generate a number of new venture ideas, regardless of their novelty or usefulness. The idea elaboration phase is similar to how a mental image associated with a new venture idea gets augmented by sensory information and subsequently matched. In the idea championing phase the idea gets actively promoted and pushed toward implementation, and this phase is akin to the transition between a 3rd- and 1st-person opportunity belief. Idea implementation falls outside our conceptual model.

Our model is grounded in human capital theory (Becker, 1964). Human capital scholars distinguish between GHC and SHC (Becker, 1964), and many studies in the entrepreneurship literature have used disaggregated measures of GHC and SHC. For instance, entrepreneurship scholars have employed a wide array of indicators to measure human capital: education, start-up experience, skills, competences, prior knowledge, employment experience, and industry experience, among others (Unger et al., 2011). Prior research notes that human capital gained

through education and work experience is considered GHC and that human capital from entrepreneurship and industry experience is considered SHC (Bergmann, 2015; Dimov & Shepherd, 2005; Gimeno et al., 1997). Our model distinguishes between education-based knowledge and work experience as constituent dimensions of GHC, and entrepreneurship and industry experience as constituent dimensions of SHC, within the context of the EOI process.

We argue that human capital is not only a critical input for the ability to generate new venture ideas, but it may also assist in augmenting and refining the mental images associated with new venture ideas. As a consequence, human capital facilitates the subsequent matching of the resultant mental images with the individual's mental model of an opportunity (Grégoire & Shepherd, 2012). Specifically, human capital assists individuals in their cognitive efforts to complete the mental images of new venture ideas by determining whether or not alignment exists among product/service features, customer needs, and target market, and whether general feasibility can be established (Grégoire et al., 2010). This in turn may result in different degrees of matching of the mental images associated with new venture ideas with the individual's mental model of an opportunity (Dimov, 2010). The better the alignment, the closer the match of the mental image associated with a new venture idea with that of an opportunity, and the stronger individuals' beliefs are that they have identified an opportunity, that is, the higher the *favorability of the opportunity belief*.

Our proposed model further differentiates between the favorability of 3rd-person and 1st-person opportunity beliefs (McMullen & Shepherd, 2006). A more favorable 3rd-person opportunity belief forms when, after incorporating relevant sensory information, the mental image of a new venture idea better matches the individual's image of an opportunity for someone with the right skill set, motivation, and ability (Baron & Ensley, 2006; Grégoire et al., 2010).

Further, the presence of 3rd-person opportunity beliefs may trigger a process whereby individuals assess the potential personal gains and losses of acting on the opportunity belief, and determine whether doing so is personally desirable and feasible (McMullen & Shepherd, 2006; Scheaf, 2018), that is, gauges the favorability of 1st-person opportunity beliefs. Thus, individuals determine whether there is a match between the mental image of a 3rd-person and a 1st-person opportunity belief or not (Choi & Shepherd, 2004; Haynie et al., 2009). Moreover, 1st-person opportunity beliefs are formed through an "individuation" process, whereby the interpretation of sensory information from the environment is influenced by individual-specific factors, like human capital (Wood et al., 2014). Our conceptual model is depicted in Figure 1.

Insert Figure 1 about here

2.1. Hypotheses

2.1.1. The relationship between human capital and 1st-person opportunity beliefs

Despite some studies suggesting the existence of mental ruts (Dane, 2010; Shepherd & DeTienne, 2005) and knowledge corridors (Gruber, MacMillan, & Thompson, 2013), there are strong arguments to believe that human capital is positively related to the favorability of 1st-person opportunity beliefs.

Education-based knowledge is a type of GHC that can shape the formation and favorability of 1st-person opportunity beliefs. Unlike experiential knowledge, which is formed through practical experience and the personal recollection, reflection, and interpretation of directly experienced instances and events (Holcomb, Ireland, Holmes, & Hitt, 2009), education-based knowledge is not informed by personal past events. It is a body of knowledge that a forward-looking person decides to acquire, hoping to use it prospectively under conditions and for purposes that may not be completely known at the time of learning. Education-based

knowledge delivers knowledge of technologies, theories, and others' experiences, which enhances individuals' cognitive abilities to envision novel technical, functional, or design aspects of a product. Mental maps that are enriched by theoretical and abstract knowledge empower individuals to better assess alignment between attribute comparisons (Chi, Feltovich, & Glaser, 1981), for example between attributes (and their relationships) of mental images of a new venture idea and that of an opportunity, and therefore they enhance the favorability of 1st-person opportunity beliefs.

Individuals with *experience-based knowledge*, another type of GHC, may have accumulated this experience from an array of different types of work, and they can best be described as "jacks-of-all-trades" who know a little about a lot of things; that is, they may have breadth of experience (Gabrielsson & Politis, 2012). Work experience gained from a broader array of fields engenders experiential knowledge that is also tacit in nature, which enables the individual to develop alternative mental images of opportunities. Such knowledge will facilitate the matching of mental images of new venture ideas with these alternative mental images of a personal opportunity and enhance the favorability of 1st-person opportunity beliefs (Fern, Cardinal, & O'Neill, 2012).

Baron and Ensley (2006) show that the mental models of opportunities of individuals who have *entrepreneurship experience*, a type of SHC, have more attributes (value proposition, customer need, target market) and have more and richer connections between these attributes, relative to those without entrepreneurial experience. In addition, individuals with entrepreneurial experience possess procedural knowledge that results in a much clearer, richer, and action-oriented mental image of an opportunity (Baron & Ensley, 2006; Dimov, 2010). These individuals, after interpreting sensory environmental information, are likely better at matching

the mental images of new venture ideas with the mental image of an opportunity. That is, entrepreneurship experience enhances the favorability of 1st-person opportunity beliefs.

Finally, *industry experience*[2] (SHC) provides individuals with an informational advantage on the human resources, demand, and supply conditions in an industry, the regulations that are of special importance to the industry, and the skills and capabilities of employees, suppliers, and manufacturers in the industry (Mathias, Williams, & Smith, 2015; Shane, 2000). Specifically, industry experience helps individuals determine whether alignment among product/service features, customer needs, and market segment, all potential attributes of a mental image associated with a personal opportunity, can be established (Grégoire et al., 2010). Industry knowledge enables individuals to focus their attention on those pieces of sensory opportunity-relevant data that are similar or dissimilar from past information, process this information more effectively to assist in a more accurate forecast of potential personal gains and losses, and determine the personal desirability and feasibility associated with a 1st-person opportunity (Dimov, 2010; Gielnik, Krämer, Kappel, & Frese, 2014). We expect that:

Hypothesis 1 (H1). *There is a positive relationship between (1a) general and (1b) specific human capital and the favorability of 1st-person opportunity beliefs*

2.1.2. The relationship between human capital and ability to generate new venture ideas

The starting point of Vogel's (2017) model is new venture idea generation or entrepreneurial ideation, which refers to the process of creating, sourcing, or developing ideas for new products, services, business models, unique customer needs, or a combination of these (Flynn, Dooley, O'Sullivan, & Cormican, 2003; Kier & McMullen, 2018). We argue that the positive impact of human capital on an individual's ability to generate new venture ideas rests on the fact that ideation is in part determined by both domain-specific skills and knowledge

[2] Industry experience refers to a situation in which the focal individual generates new venture ideas or forms opportunity beliefs for a new venture idea in the same industry in which he or she gained experience.

(Amabile, 1983; Perry-Smith & Shalley, 2003) and knowledge across different domains (Ward, 2004).

Education-based knowledge (GHC) may assist in creating novel connections to form new combinations that can be technically realized (Eckhardt & Shane, 2003). The relationship between *education-based knowledge* and the ability to generate new venture ideas can be explained by the nature of the knowledge, that is, codified knowledge as opposed to tacit knowledge (Polanyi, 1967). When it comes to technical novelty and disruptiveness in ideation and innovation, cognitive schemas that were formed exclusively based on experiential, tacit knowledge of the past may have limited or no relevance (Christensen & Bower, 1996). In contrast, education-based knowledge, which is codified in nature, can be used to make sense of novel, newly generated, and schema-inconsistent data and patterns. This knowledge is helpful in focusing on those parts of technologies, techniques, and theories that are likely to increase an individual's ability to generate new product or service ideas (Rietzschel, Nijstad, & Stroebe, 2007).

The important tacit, sensory information acquired through *work experience* (GHC) in multiple industries is likely to be helpful in enhancing an individual's ability to generate new venture ideas, which are themselves incomplete mental maps of a value proposition, customer need, and/or target market (Davidsson, 2015; Vogel, 2017). Building on creative cognition research suggesting that entrepreneurial ideation is enhanced by the merging of previously unrelated concepts (Ward, 2004), we expect that individuals with greater GHC across distant fields have a superior ability to generate new venture ideas than those who lack this experience.

Individuals with *entrepreneurship experience* (SHC) "use their active imaginations to create new ideas, resources, and markets" (Chiles, Tuggle, McMullen, Bierman, & Greening,

2010, p. 8). New venture ideas are "imagined future ventures; i.e., imaginary combinations of product/service offerings, markets, and means of bringing these offerings into existence" (Davidsson, 2015, p. 675). As a consequence, imagination plays a key role in the ability to generate new venture ideas. Imagination enables individuals to create mental images of things that may not exist in real life (Collins, 2006) and mentally simulate (Gaglio, 2004). Kier and McMullen (2018) provide empirical evidence that imagination is linked to an individual's ability to generate new venture ideas.

Individuals with *industry experience* (SHC) may have developed social ties, engaged in prior interactions, and established the desires, intentions, beliefs, and emotions of others to assist in imagining solutions to others' problems (Kier & McMullen, 2018). Studies by Baron and Ensley (2006), Grégoire et al. (2010), and Shane (2000) provide evidence that the cognitive schemas of individuals who have industry experience incorporate what they learned from their experiences about the market, ways to serve it, customer needs, regulation, existing technologies and techniques in the industry, and other stakeholders' preferences. We acknowledge that there is also evidence that individuals with industry experience become cognitively entrenched in the industry's routines and paradigms and find it increasingly difficult to leverage their industry experience to generate additional new venture ideas (Furr, 2019; Gruber, MacMillan, & Thompson, 2012; Ward, 2004). However, we expect that on average, individuals' cognition, enhanced by a more complex knowledge structure from industry-related human capital, should be more adept in envisioning ideas for new ventures. We expect that:

Hypothesis 2 (H2). *There is a positive relationship between (2a) general and (2b) specific human capital and the ability of an individual to generate new venture ideas.*

2.1.3. The mediating role of new venture ideas

The key premise for the mediating role of the ability of an individual to generate new venture ideas is based on the EOI process model. EOI is initiated by a *creative stage* in which human capital engenders an individual's ability to generate new venture ideas (ideation), followed by an *elaboration stage* in which the potential entrepreneur becomes confident (or not) in his or her belief that some of the venture ideas represent a favorable opportunity for someone or for the individual to exploit (Dimov, 2007). In H1 we argued that human capital is positively related to the favorability of 1st-person opportunity beliefs. In addition to what is proposed in H1 and H2, we further propose that the relationship between an individual's ability to generate new venture ideas and the favorability of 1st-person opportunity beliefs is positive. Stated formally, the ability to generate new venture ideas mediates the relationship between human capital and the favorability of 1st-person opportunity beliefs. Creativity theory predicts that a higher level of human capital enhances an individual's ability for new venture idea generation. In the elaboration stage, more new venture ideas will increase the likelihood of forming more favorable 1st-person opportunity beliefs.

In the elaboration stage, individuals interpret situational conditions through sensemaking (e.g. Barreto, 2012; Mitchell, Friga, & Mitchell, 2005), and seek to enrich and subsequently match the mental images associated with new venture ideas with those of 1st-person opportunities. In addition, they use their judgment about the ability of the new venture ideas to address a perceived unmet need and personally benefit the focal individual (Hsieh, Nickerson, & Zenger, 2007). We expect that the higher the number of new venture ideas, after elaborating and enriching the mental images associated with these ideas with sensory data and matching them with the mental image of the individual's ideal opportunity, the higher the likelihood of forming

more favorable 1st-person opportunity beliefs (Grégoire et al., 2010; Wood et al., 2014). Combining arguments in H2 with the mechanism described above leads to:

Hypothesis 3 (H3). *The ability of an individual to generate new venture ideas mediates the relationship between human capital and the favorability of 1st-person opportunity beliefs.*

2.1.4. The mediating role of 3rd-person opportunity beliefs

We further posit that the favorability of 3rd-person opportunity beliefs mediates the relationship between an individual's ability to generate new venture ideas and the favorability of 1st-person opportunity beliefs. Prior research theorizes that an individual's ability to generate new venture ideas has a positive relationship with the favorability of 1st-person opportunity beliefs (Corbett, 2005; Csikszentmihalyi, 1996). However, the ability to generate new venture ideas is also likely to be positively related to the favorability of 3rd-person opportunity beliefs. The more mental images associated with new venture ideas (Davidsson, 2015; Grégoire et al., 2010), the higher the likelihood that when these images, against which sensory information is compared, are being matched with the individual's mental image of an opportunity, some matches will result in favorable opportunity beliefs for someone with the right qualities (skills, motivation, resources). That is, the process will yield favorable 3rd-person opportunity beliefs (Grégoire et al., 2010).

Further, the favorability of 3rd-person and 1st-person opportunity beliefs are positively related. Since individuals are inherently self-interested and aim to maximize personal gains (Cropanzano, Goldman, & Folger, 2005), a favorable 3rd-person opportunity automatically sets in motion an assessment whereby individuals evaluate whether a 3rd-person opportunity belief constitutes a personally desirable and feasible opportunity (McMullen & Shepherd, 2006). The favorability of a 1st-person opportunity belief flows from the favorability of a 3rd-person

opportunity belief because, theoretically, a (favorable) opportunity for someone must pre-exist before it can exist for the focal individual (Choi & Shepherd, 2004). Hence we posit that:

Hypothesis 4 (H4). *The favorability of 3rd-person opportunity beliefs positively mediates the positive relationship between an individual's ability to generate new venture ideas and the favorability of 1st-person opportunity beliefs.*

3. METHOD

3.1. Search strategy and inclusion criteria

We identified the articles in our sample by following a five-stage approach (Vishwanathan, van Oosterhout, Heugens, Duran, & Van Essen, 2020). First, we examined and reviewed the EOI literature (George, Parida, Lahti, & Wincent, 2016; Short, Ketchen, Shook, & Ireland, 2010). Second, we searched for manuscripts in the 10 journals covered by Short et al.'s (2010) review, including *Entrepreneurship Theory and Practice*, *Journal of Business Venturing*, *Strategic Entrepreneurship Journal*, *Academy of Management Journal*, and *Strategic Management Journal*, using relevant keywords[3] including "*entrepreneurial opportunity,"* "*opportunity recognition,"* "*opportunity identification,"* and *"new venture ideas."* Third, we searched in academic research databases including *ABI-Inform*, *EBSCOhost*, *ScienceDirect*, *Scopus*, *Web Of Science*, *Google Scholar*, *RePEc*, *Druid*, *SSRN*, *ProQuest*, and *IEEE Xplore*. Fourth, we used the snowballing technique to identify additional studies by searching in the references section of the articles identified in the prior stages. Fifth, we e-mailed authors of studies that did not provide the statistics needed to estimate the bivariate relationship between variables to request a table of correlations between the relevant variables. Our search approach yielded a final sample of 126 studies containing 146 statistically independent samples. Table A1 in the Appendix lists the studies included in this meta-analysis and their characteristics. We developed a coding scheme for extracting data from each study about each effect size, including the sample size, definition,

[3] Only some exemplar keywords and terms used in the search are shown here (Vishwanathan et al., 2020).

reliability coefficient, and effect size of our dependent, independent, and mediating variables. The average percentage agreement was 97 percent, and Cohen's kappa (Cohen, 1960) was 0.93.[4]

3.2. Measures

General human capital is defined as the sum of education-based knowledge (Dimov & Shepherd, 2005) and work experience not specific to the new venture idea or the nascent venture (Ucbasaran et al., 2008). *Specific human capital* refers to the knowledge and skills gained through prior entrepreneurship experience (Dimov, 2010) or same-industry experience in tasks, functions, or jobs specific to the same industry, markets, technology, or customer segments relevant to the new venture idea (Marvel, 2013).

New venture ideas are "imagined future ventures" or largely incomplete preliminary mental images of economic activities that seek to transform resources to deliver a product/service to a group of customers/users (Davidsson, 2015, p. 684). Variables that measured how many new venture ideas respondents had identified without including an adjective (i.e., "promising," "good," "worth pursuing") were coded as the ability to generate new venture ideas. Thus, in our model, the *ability to generate new venture ideas* measures the *number* of new venture ideas generated by respondents.

Opportunity beliefs refer to respondents' subjective evaluation of the new venture idea based on the potentially favorable (i.e., profitability, likelihood of survival, growth potential) or unfavorable (i.e., risk, probability of failure, personal loss) outcomes respondents envision from launching the imagined venture. The *favorability of 3rd-person opportunity beliefs* measures the respondent's assessment of the *degree* of favorability and attractiveness of a new venture idea for "someone in general", ranging from unfavorable to favorable. This construct is measured as

[4] To distinguish between 3rd-person and 1st-person opportunity beliefs, we conducted a q-sort study with 30 participants and 52 questions with measures of 3rd- and 1st-person opportunity beliefs. Results of sensitivity analyses are reported in Appendix G.

respondents': (1) beliefs about the existence of good opportunities in the area where they live, (2) favorable or unfavorable beliefs about an externally stimulated new venture idea (i.e., a new venture idea described in a case study as part of an experiment), and (3) favorable beliefs about their own nascent venture, regardless of who owns and operates it. The *favorability of 1st-person opportunity beliefs* reflects the *degree* to which respondents perceive a new venture idea to be personally attractive and worth pursuing, again ranging from unfavorable to favorable. These 1st-person opportunity beliefs are measured as respondents': (1) favorable or unfavorable beliefs about their own new venture idea or nascent venture, (2) favorable or unfavorable beliefs about the expected outcomes in the event that they were to pursue a new venture idea, (3) favorable or unfavorable beliefs about the potential effect of external events on their research or entrepreneurial activities, and (4) willingness to pursue a new venture idea.[5] Effect sizes were corrected for attenuation due to unreliability of measurement by dividing each effect size by the product of the square root of the reliability coefficient (i.e., Cronbach's alpha) of the dependent and/or independent variable (Schmidt & Hunter, 2014).[6]

3.3. Statistical analysis

Meta-analytical (MA) structural equation modeling (SEM) (MASEM) analyses were performed to test the hypotheses (Bergh et al., 2016; Combs, Crook, & Rauch, 2019). MASEM is a research technique that combines meta-analytic procedures with SEM techniques to perform analyses that go beyond the study of bivariate correlations between two variables made possible by meta-analysis. MASEM is conducted through a two-stage process: (1) in the first stage, a pooled correlation matrix is estimated, and (2) in the second stage, a structural model is fitted onto the

[5] In all studies in our sample, the favorability of 3rd-person opportunity beliefs were measured before or at the same time as the favorability of 1st-person opportunity beliefs (see Table E1 in Appendix E). Results of sensitivity analyses are reported in Tables E2–E9 in Appendix E.

[6] For effect sizes with missing reliability coefficients, we used the average for the effect sizes for which it was reported (Schmidt & Hunter, 2014; Unger et al., 2011). Results of sensitivity analyses are reported in Appendix D.

pooled correlation matrix (Cheung & Chan, 2005). We followed Cheung's (2015) two-stage structural equation modeling (TSSEM) approach to MASEM. Thus, in the first stage, we estimated the pooled correlation matrix (see Table 1) and its asymptotic covariance matrix. To account for the dependence between effect sizes from the same sample (Combs, Ketchen, Crook, & Roth, 2011, p. 192), we used a three-level multivariate model (Cheung, 2015; Lipsey & Wilson, 2001; Wilson, Polanin, & Lipsey, 2016) and specified the dependence between effect sizes from the same sample as level-two random effects, the between-study random effects as level-three random effects, and the within-study sampling error as level-one fixed effects. In the second stage, we used weighted least squares (WLS) to fit the structural models onto the pooled correlation matrix with the inverse asymptotic covariance matrix as the weight matrix (Cheung, 2015; Wilson et al., 2016).[7] All analyses were performed in R using metafor (Viechtbauer, 2010) and metaSEM (Cheung, 2015).

Insert Table 1 about here

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4. RESULTS

We tested the hypotheses using three different models of EOI. The *direct-effect model* is shown in Figure 2a and Figure 2b. In this model, the ability to generate new venture ideas, SHC, and GHC are directly related to the favorability of 3rd- and 1st-person opportunity beliefs. H1 predicted a positive relationship between GHC (H1a) and SHC (H1b) and the favorability of 1st-person opportunity beliefs. The results shown in Figure 2b[8] suggest that while the relationship between GHC and 1st-person opportunity beliefs is not significant ($r = 0.02$; $p > 0.10$), the

[7] Some studies in our sample report effect sizes for more and others for fewer relationships in our model and no study reports effect sizes for all relationships. We account for differences in the sample size and number of studies used to estimate each cell in the pooled correlation table (Table 1) by weighing each cell by the inverse of the sampling variances and covariances (Cheung, 2015).

[8] The corresponding table for each figure can be found in Appendix A, from Table A2 to Table A5.

relationship between SHC and 1st-person opportunity beliefs is positive and significant ($r = 0.06$; $p \leq 0.001$). Thus, our results provide support for H1b but not for H1a.

Insert Figure 2a and Figure 2b about here

The *mediated-effect model* is shown in Figure 3. In this model, GHC and SHC predict the ability to generate new venture ideas, and the ability to generate new venture ideas mediates the effect of GHC and SHC on the favorability of 1st-person opportunity beliefs. H2a predicted a positive relationship between GHC and the ability to generate new venture ideas, while H2b predicted a positive relationship between SHC and the ability to generate new venture ideas. The results reported in Figure 3 suggest that there is a positive and significant relationship between GHC ($r = 0.07$; $p \leq 0.001$) and the favorability of 1st-person opportunity beliefs and between SHC ($r = 0.10$; $p \leq 0.001$) and the favorability of 1st-person opportunity beliefs. Thus, our results provide support for both H2a and H2b.

H3 predicted that the ability to generate new venture ideas mediates the relationship between human capital and the favorability of 1st-person opportunity beliefs. A comparison of the direct-effect model in Figure 2b with the mediated-effect model in Figure 3 shows that the mediated-effect model attains a better fit. The indirect effect of GHC ($r = 0.02$; $p \leq 0.01$) and SHC ($r = 0.03$; $p \leq 0.001$) through the ability to generate new venture ideas on the favorability of 1st-person opportunity beliefs is positive and significant. Thus, our results offer support for H3.

Insert Figure 3 about here

The *full-effect* model is shown in Figure 4. This model extends the mediated-effect model by adding the favorability of 3rd-person opportunity beliefs as a mediator between the ability to

generate new venture ideas and the favorability of 1st-person opportunity beliefs. A comparison of the full-effect model in Figure 4 with the mediated-effect model in Figure 3 shows that the full-effect model attains a better fit. The mediating effect of the favorability of 3rd-person opportunity beliefs between the ability to generate new venture ideas and the favorability of 1st-person opportunity beliefs is positive and significant ($r = 0.19$; $p \leq 0.001$).[9] Thus, H4 is supported.

Insert Figure 4 and Table 2 about here
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5. DISCUSSION

5.1. Discussion of results and practical implications

In this study we explore a theoretically and empirically challenging research question that has vexed scholars for several decades: How does human capital contribute to the formation and favorability of opportunity beliefs?

Overall, the results of this meta-analysis point to a statistically significant albeit small influence of human capital in the EOI process. We find that only SHC matters for the formation of favorable 1st-person opportunity beliefs. However, in meta-analyses, a null effect, such as for GHC- favorability of 1st-person opportunity beliefs, does not necessarily mean that there is no relationship (Dalton, Daily, Ellstrand, & Johnson, 1998). Koslowsky and Sagie (1993) suggest that credibility intervals (CrIs) larger than 0.11 indicate the presence of moderators. In the case of GHC[10] the 80 percent CrI is 0.06, and we can safely say that there is no relationship between GHC and the favorability of 1st-person opportunity beliefs. The implication of this result is that gaining SHC (industry and entrepreneurial experience) is useful, but quite small in terms of

[9] Robustness tests reported in Appendix B provide further support for the results reported in this section, while meta-regression results reported in Appendix C test several boundary conditions for key relationships in our models.
[10] The CrI for SHC is 0.06, also suggesting no additional moderating influences.

impact, in the early stage of the entrepreneurial process (i.e., EOI). SHC plays a more prominent role in the opportunity exploitation stage (Haynie et al., 2009). Investors pay almost exclusive attention to human capital, such as the experience, knowledge, and execution intelligence of budding entrepreneurs (Baum & Bird, 2010; Ciuchta, Letwin, Stevenson, McMahon, & Huvaj, 2018), in the opportunity exploitation stage, but, as our results suggest, they should not overlook the influence of SHC in evaluating opportunities. Our findings differ in some respects to those from another related meta-analysis in a similar stage of the entrepreneurial process: Bae et al. (2014) find that the correlations between, on the one hand, entrepreneurship ($r = 0.143$) and business education ($r = 0.051$) and, on the other hand, entrepreneurial intentions are somewhat similar or stronger than what we find. However, Unger et al. (2011) find that the strength of the overall relationship between human capital and entrepreneurial success, the outcome of the last stage of the entrepreneurial process, is rather limited ($r = 0.098$). Another meta-analysis finds that the relationship between human capital and financial performance is relatively modest ($r = 0.21$) but is more pronounced for the SHC ($r = 0.30$) dimension (Crook et al., 2011). Clearly, human capital has different impacts in different stages of the entrepreneurial process.

In the creativity stage, the effect sizes of general and specific human capital are small in magnitude, yet critical to an individual's ability to generate new venture ideas, consistent with theories of creativity (Amabile, 1983; Ward, 2004). This theory posits that domain knowledge, in part, along with several other antecedents, are instrumental for individuals' ability to generate many ideas (Amabile, 1983). Our results suggest that individuals with domain knowledge accumulated through education, for example, or those who have primarily experientially acquired knowledge (SHC), are performing better at generating more new venture ideas than those with lower levels of GHC or SHC. However, those individuals with high levels of both

GHC and SHC are likely able to do even better in generating new venture ideas. Taking it one step further, this finding also has clear implications for assembling a founding team, since it is very useful to have a strong mix of GHC and SHC in the founding team in order to be able to generate new venture ideas, not only initially but likely also after pivoting based on feedback from stakeholders (Grimes, 2018).

Further, our results suggest that an individual's ability to generate new venture ideas serves effectively as a bridge between human capital and the favorability of 3rd-person opportunity beliefs, and in turn, the favorability of 1st-person opportunity beliefs, and has a stronger impact than human capital. Especially the relationships in the elaboration stage between the ability to generate new venture ideas and the favorability of 3rd- and 1st-person opportunity beliefs are particularly strong. In contrast, a weak ability in generating new venture ideas would result in less favorable opportunity beliefs. We find a strong association between the ability to generate new venture ideas and the favorability of 3rd- and 1st-person opportunity beliefs, as a larger pool of new venture ideas being subjected to iterative sensemaking processes will result in an increased likelihood of retaining only those ideas that match the mental image of an individual's ideal opportunity. This is analogous to long-tail distributions in innovation, which suggests that breakthrough innovations are unlikely to result from a narrow set of ideas, but rather, the likelihood of a breakthrough innovation increases when considering many more ideas (Fleming, 2007). An important implication is that the volume of new venture ideas is important. New ideas come into being by (re-)combining existing knowledge and information in new and different ways, from different perspectives. That is why individuals with high levels of both GHC and SHC are better able at generating more new venture ideas, since they have different social identities with corresponding knowledge bases and are able to activate and integrate

relevant knowledge from across these knowledge bases (Higgins, 1996) to generate new ideas. Moreover, these individuals are also better at interpreting sensory information and matching mental images of new venture ideas and ideal opportunities in the elaboration stage, that is, form more favorable opportunity beliefs.

A post-hoc analysis further reveals that favorable 3rd-person opportunity beliefs are strongly associated with the personal gain estimation and the overall general evaluation dimensions of a 1st-person opportunity belief but not with personal loss estimation and personal desirability and feasibility. One plausible explanation may be that those who form favorable 3rd-person opportunity beliefs that later transition into favorable 1st-person opportunity beliefs may be overconfident about their abilities to exploit the new venture idea or display a large degree of hubris (Hayward, Shepherd, & Griffin, 2006), making the role of personal losses and feasibility irrelevant. In addition, other factors such as the specific context, the individual's personal circumstances, and access to resources may play an important role in this transition.

5.2. Theoretical implications

When examining the credibility intervals of the relationships, the results suggest the potential for moderating influences, especially in the elaboration stage. For example, Hmieleski, Carr, and Baron (2015) find significant moderating influences in a study examining the influence of human capital on entrepreneurial action in discovery and creation contexts, consonant with our own meta-regression results using the development status of a country as moderator. We therefore believe that human capital as an overarching theoretical framework is insufficient in explaining the nuances and unique impacts of knowledge on the formation and favorability of 3rd- and 1st-person opportunity beliefs. Future research therefore should adopt a contingency approach whereby theoretically driven moderators related to characteristics such as personality

(Brandstätter, 2011), entrepreneurial emotion (Baron, Hmieleski, & Henry, 2012; Cardon, Foo, Shephard, & Wiklund, 2012), and cognition (Baron, 2004) are integrated in the theoretical framing, as these factors may explain a larger portion of the variance in the favorability of opportunity beliefs.

Further, the explanatory power of human capital theory in this study is clearly under-socialized and that's why social capital theory (Mosey & Wright, 2007) could further shed additional light, for instance, on the mechanisms that operate in the elaboration stage. Beyond human and social capital theories, additional insights could be gleaned from cognitive theories by adopting regulatory focus and self-efficacy lenses as evidenced in prior research (Tumasjan & Braun, 2012). Finally, future studies should make an individual's ability to generate new venture ideas a focal construct in theorizing about opportunity beliefs, by integrating creativity, cognitive and entrepreneurship perspectives at multiple levels of analysis.

5.3. Limitations and future research directions

Like any study, ours has limitations, which offer opportunities for future research. First, the literature stream on entrepreneurial opportunities and the constructs used to represent them is plagued with conceptual ambiguity (Davidsson, 2015; Hansen, Shrader, & Monllor, 2011). Therefore, significant advances could be made if scholars could converge on a consensus about a fair and accurate operationalization and labeling of 3rd- and 1st-person opportunity beliefs. Using measures of 3rd- and 1st-person opportunity beliefs that are not contaminated by 1st- and 3rd-person concerns and have fine grained gradations (from very unfavorable to very favorable) will yield more meaningful insights, improve the comparability of results across studies, and enhance our understanding of the EOI process. Similarly, a richer operationalization of the new venture ideas construct (Davidsson, 2015), given its strong relationship to the favorability of

opportunity beliefs, can offer even more insights. Finally, future studies could incorporate more fine-grained measures of human capital, for example work experience, which can be further broken down into different types of functional experience (R&D, marketing, etc.). Second, most of the data in the underlying primary studies is not longitudinal in nature and therefore our theoretical assumption of a process theory may not match entirely with the research designs adopted in the primary studies.

Third, our study does not incorporate any environmental and institutional variables as contingencies, other than country economic development status, opening opportunities for future meta-analytic research (Valdez & Richardson, 2013; Welter, 2011). Prior studies demonstrate that the effectiveness and impact of human capital is contingent upon the context in which it is deployed (Hmieleski, Carr, & Baron, 2015). Fourth, our measure for the number of new venture ideas may contain a positivity bias—it builds on the best ideas participants have come up with themselves or on researcher-designed ideas meant to represent "opportunities," at least for some participants. And fifth, we do not control for various types of individual characteristics of entrepreneurs beyond mere demographic information because of lack of data. As a previous study reports (Ardichvili, Cardozo, & Ray, 2003), there may be interaction effects between human capital and those cognitive and personality traits in shaping the EOI process, as suggested in our implications for theory.

6. CONCLUSION

This study offers new insights into how multiple types of human capital influence the EOI process. The empirical results suggest that all types of human capital affect entrepreneurial ideation, but that only SHC directly affects the formation and favorability of 3rd- and 1st-person opportunity beliefs. SHC helps in forming both a mental image of an ideal opportunity and in the

interpretation of sensory environmental data that assists in the matching process of mental images. We further establish that the strength of the relationships in our process model is influenced by several methodological and contextual moderating factors.

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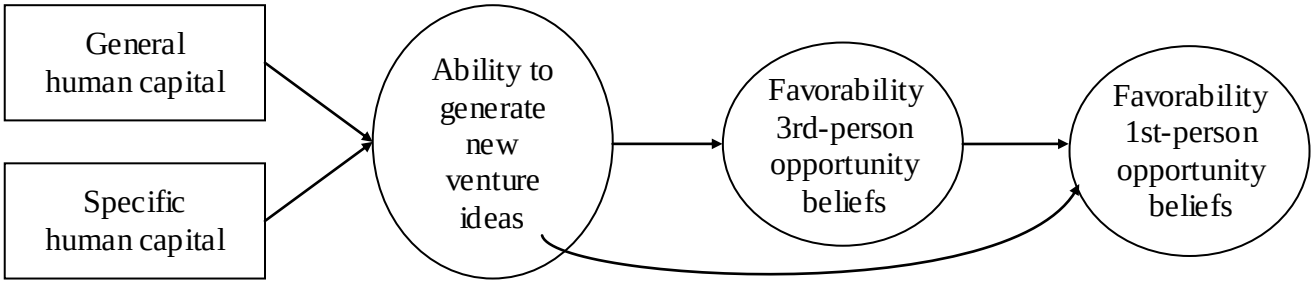

FIGURE 1. Conceptual model of the relationships between variables

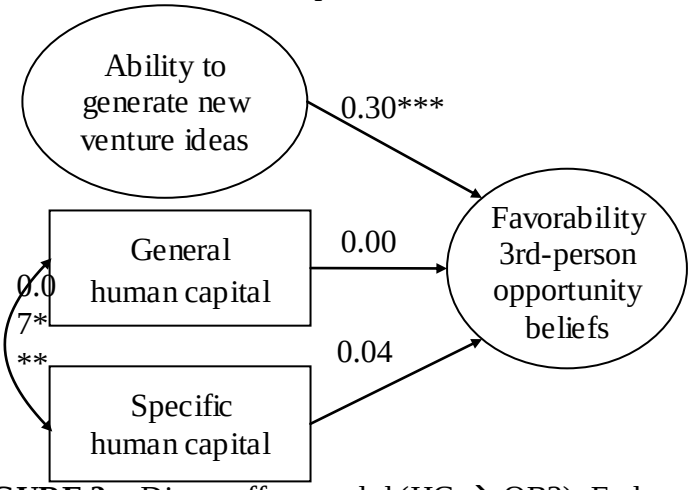

FIGURE 2a. Direct-effect model (HC → OB3). Endogenous error terms not included.
(*** $p \leq 0.001$, ** $p \leq 0.01$, * $p \leq 0.05$, † $p \leq 0.10$)

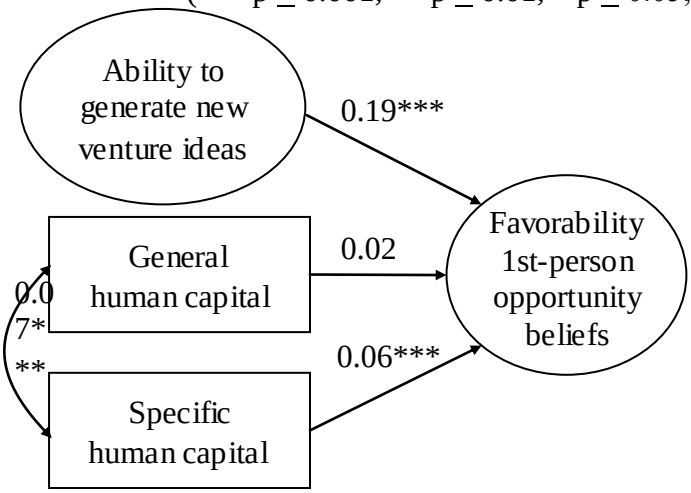

FIGURE 2b. Direct-effect model (HC → OB1). Endogenous error terms not included.
(*** $p \leq 0.001$, ** $p \leq 0.01$, * $p \leq 0.05$, † $p \leq 0.10$)

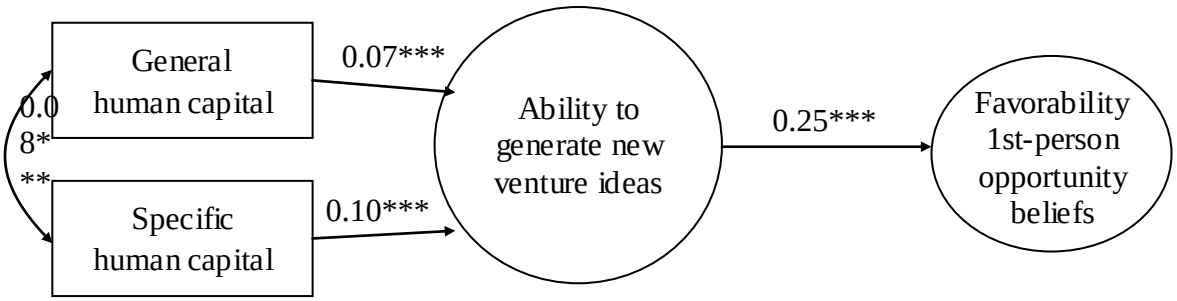

FIGURE 3. Mediated-effect model (HC → NVI → OB1). Endogenous error terms not included.
(*** p ≤ 0.001, ** p ≤ 0.01, * p ≤ 0.05, † p ≤ 0.10)

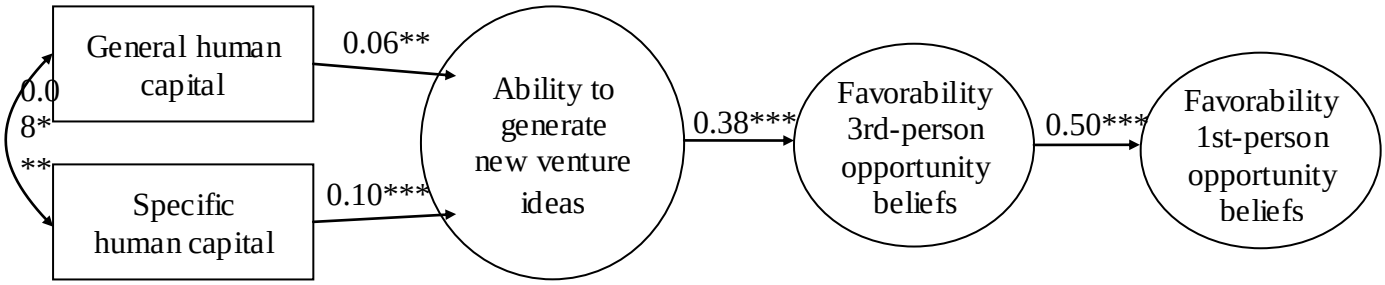

FIGURE 4. Full-effect model (HC → NVI → OB3 → OB1). Endogenous terms not included.
(*** p ≤ 0.001, ** p ≤ 0.01, * p ≤ 0.05, † p ≤ 0.10)

TABLE 1. Pooled correlation matrix

	1	2	3	4
1. General Human Capital				
2. Specific Human Capital				
ρ	0.09			
K (N)	173 (13,465)			
3. Ability to generate new venture ideas				
ρ	0.08	0.09		
K (N)	88 (8,704)	127 (9,357)		
4. Favorability of 3rd-person Opportunity Beliefs				
ρ	0.01	0.04	0.31	
K (N)	54 (327,365)	73 (3,294)	9 (851)	
5. Favorability of 1st-person Opportunity Beliefs				
ρ	0.04	0.08	0.21	0.49
K (N)	78 (13,438)	150 (17,095)	13 (2,798)	37 (2,681)

ρ = mean weighted (corrected) effect size; K = number of effect sizes used to estimate ρ; N = number of observations used to estimate ρ

APPENDIX A

TABLE A1. List of studies included in the meta-analysis and their characteristics

Author(s)	Sample Size	Country	EOI Construct Label(s)	Human Capital Construct Operationalization(s)	Prior Knowledge or Human Capital	Observational or Experimental Study
Aido Almagro et al. (2016)	7,374	30 countries	**OB3**(Respondents believe there are good opportunities to start a firm in the area where they live within the next 6 months)	**EK**(Educational Attainment)	Human Capital	Observational
Aido Almagro et al. (2016)	3,636	24 countries	**OB3**(Respondents believe there are good opportunities to start a firm in the area where they live within the next 6 months)	**EK(**Educational Attainment)	Human Capital	Observational
Aido Almagro et al. (2016)	4,221	15 countries	**OB3**(Respondents believe there are good opportunities to start a firm in the area where they live within the next 6 months)	**EK(**Educational Attainment)	Human Capital	Observational
Alsos, Kolvereid, & Isaksen (2006)	410	Norway	**NVI**(Number of opportunities identified), **OB1**(Respondents' assessment of the novelty of their venture idea)	**EE**([1]Serial Entrepreneur, [2]Portfolio Entrepreneur)	Human Capital	Observational
Alsos, Ljunggren, & Pettersen (2003)	782	Norway	**OB1**(Respondents' perception of their own abilities and opportunities to start a business was measured by two factors representing "Perceived abilities to start a business" and "Perceived opportunities from experience")	**EE**(Owns another business)	Human Capital	Observational
Anis & Mohamed (2012)	228	Tunisia	**NVI**(Number of opportunities identified before launch)	**EK(**Education Level), **IE**(Experience in Sector), **WE**(Managerial Experience not Specific to Sector)	Human Capital	Observational
Arenius & De Clercq (2005)	4,536	Belgium/ Finland	**OB3**(Respondents believe there are good opportunities to start a firm in the area where they live within the next 6 months)	**EK(**Educational attainment)	Human Capital	Observational
Arenius & Kovalainen (2006)	1,004	Finland	**OB3**(Respondents believe there are good opportunities to start a firm in the area where they live within the next 6 months)	**EK(**Educational attainment)	Human Capital	Observational
Arenius & Kovalainen (2006)	1,020	Norway	**OB3**(Respondents believe there are good opportunities to start a firm in the area where they live within the next 6 months)	**EK(**Educational attainment)	Human Capital	Observational
Arenius & Kovalainen (2006)	1,182	Denmark	**OB3**(Respondents believe there are good opportunities to start a firm in the area where they live within the next 6 months)	**EK(**Educational attainment)	Human Capital	Observational
Arenius & Kovalainen (2006)	1,455	Sweden	**OB3**(Respondents believe there are good opportunities to start a firm in the area	**EK(**Educational attainment)	Human Capital	Observational

Author(s)	Sample Size	Country	EOI Construct Label(s)	Human Capital Construct Operationalization(s)	Prior Knowledge or Human Capital	Observational or Experimental Study
			where they live within the next 6 months)			
Arentz, Sautet, & Storr (2013)	64	US	**OB1**(Participant buys fruit from town to sell in village rather than consume it directly)	**IE**(Propitious group was given information about market's preferences)	Prior Knowledge	Experimental
Autio, Dahlander, & Frederiksen (2013)	275	Sweden	**OB1**(Respondent engaged in new venture organizing activities and stated that community experience was of importance in that action)	**EK(**University degree), **IE**(Product experience)	Prior Knowledge	Observational
Baggen, Lans, Biemans, & Kampen (2016)	218	Netherlands	**NVI**(Number of ideas proposed by respondent adopted by management)	**EE**(Entrepreneurship experience)	Human Capital	Observational
Baggen et al. (2017)	113	Netherlands	**NVI**([1]Number of comprehensible business ideas, [2]proportion of ideas concrete*, [3]number of categories in which individuals generated ideas*)	**IE**(Knowledge of sustainability-related topics—*respondents are asked to generate ideas for sustainable new ventures*)	Prior Knowledge	Experimental
Baldacchino (2013)	74	UK	**NVI**([1]Number of opportunities identified, [2]Expert raters' assessment of innovativeness of opportunities identified by respondents*), **OB3**(Respondents' perceived risk involved in venture options presented in experiment [reverse coded] [from Forlani & Mullins 2000])	**EK(**Years of Education), **WE**(Years of Work Experience), **EE**([1]Years ICT Business Ownership, [2]Years Non-ICT Business ownership, [3]Number of ICT Businesses Owned, [4]Number of Non-ICT Businesses Owned)	Prior Knowledge	Experimental
Barbosa, Fayolle, & Smith (2019)	447	US	**OB1**([1]Initial perceived risk in joining friend's venture [reverse coded], [2]Final perceived risk of joining friend's venture [reverse coded], [3]Initial confidence in their own capability to make the new venture a success, [4]Initial decision to join hypothetical venture in case study, [5]Final confidence in their own capability to make the new venture a success, [6]Final decision to join hypothetical venture in case study)	**EE**(Has launched venture before), **WE**(Years of employment experience)	Prior Knowledge	Experimental
Barbosa, Fayolle, & Smith (2019)	95	US	**OB3**([1]Initial confidence about fictional friend's the new venture idea, [2]Final confidence about fictional friend's new venture idea), **OB1**([1]Initial perceived risk in joining friend's venture [reverse coded], [2]Final perceived risk in joining friend's venture [reverse coded], [3]Initial decision	**EE**(Has launched venture before), **EK** (Educational attainment)	Prior Knowledge	Experimental

Author(s)	Sample Size	Country	EOI Construct Label(s)	Human Capital Construct Operationalization(s)	Prior Knowledge or Human Capital	Observational or Experimental Study
			to join hypothetical venture in case study, [4]Final decision to join hypothetical venture in case study)			
Bayon, Vaillant, & Lafuente (2015)	20,042	Spain	**OB3**(Respondents believe there are good opportunities to start a firm in the area where they live within the next 6 months)	**EK(**Educational attainment)	Human Capital	Observational
Bergmann (2015)	292	Germany	**OB1**(Respondents' beliefs about [1]general feasibility and [2]degree of alignment between means of supply and market needs of business idea they are evaluating or have recently begun to exploit [items from Grégoire et al. 2010])	**EK(**Years of University Study), **WE** (Months of professional Experience)	Human Capital	Observational
Birkinshaw & Hill (2007)	388	UK	**NVI**(Number of ideas generated in past 6 months), **OB1**(Respondents' assessment of the potential for value creation of the ideas they generated in the past 6 months)	**IE**([1]Years in job, [2]Years in Company [ideas are specific to job/company]), **PE**(Years working), **EK(**Educational attainment), **EE**([1]Started new company, [2]Started corporate venture)	Human Capital	Observational
Bolívar-Cruz, Batista-Canino, & Hormiga (2014)	24,865	Spain	**OB3**(Respondents believe there are good opportunities to start a firm in the area where they live within the next 6 months)	**EK(**[1]Educational attainment, [2]Business Education)	Human Capital	Observational
Branzei & Zietsma (2003)	70	US	**OB1**(Count of confidence statements made by participants about themselves or their new venture idea)	**EE**(Had founded venture before)	Prior Knowledge	Observational
Brinckmann & Kim (2015)	479	US	**OB1**(Respondents' revenue expectations for their nascent venture)	**EE**(Number of businesses helped start), **WE**(Years of managerial experience), **EK(**Has college or higher education)	Prior Knowledge	Observational
Capelleras, Contín-Pilart, Martin-Sanchez, & Larraza-Kintana (2013)	30,879	Spain	**OB3**(Respondents believe there are good opportunities to start a firm in the area where they live within the next 6 months)	**EK(**Graduate Degree)	Human Capital	Observational
Chen, Mitchell, Bringham, Howell, & Steinbauer (2018) (*PSED I data; overlaps with other studies based on PSED I data*)	350	US	**OB3**(Likelihood that not yet emerged nascent venture would launch, and accomplish its objectives, and succeed regardless of who owns and operates it)	**EE**(Entrepreneurship Experience), **IE** (Industry Experience "baseline industry, B2B services"), **WE**(Work Experience), **EK(**Educational attainment)	Human Capital	Observational
Choongo, Van Burg, Paas & Masurel (2016)	220	Zambia	**NVI**(Number of opportunities for making business more sustainable or starting a sustainable business identified in past 5	**EK(**Educational attainment)	Human Capital	Observational

Author(s)	Sample Size	Country	EOI Construct Label(s)	Human Capital Construct Operationalization(s)	Prior Knowledge or Human Capital	Observational or Experimental Study
			years)			
Corbett (2007)	380	US	**NVI**(Number of opportunities recognized by participant judged by expert raters)	**WE**(Index measure of general human capital), **IE**(Experience and familiarity with Bluetooth)	Human Capital	Experimental
Costa, Santos, Wach, & Caetano (2018)	283	Portugal & Germany	**OB3**(Respondents' assessment whether the opportunity described in a case study can [1]generate positive cash flow, and [2]meet customers' needs), **NVI**(Number of business ideas previously recognized)	**EK(**Educational attainment)	Human Capital	Experimental
Cox (2016)	112	US	**NVI**(Volume and completeness of ideas generated by respondent), **OB1**(Respondents' beliefs about the value creation potential of ideas they generated in past 6 months)	N/A	N/A	Observational
D'Souza (2009)	178	US	**NVI**(Expert raters' assessment of level of innovativeness of opportunities recognized by participants*)	**IE**(Treatment group was provided knowledge about the technology [MIT's three-dimensional printing, 3DP])	Prior Knowledge	Experimental
Dencker, Gruber, & Shah (2009)	436	Germany	**OB1**(Founders' assessment of the innovativeness of their new venture idea)	**EK(**Number of years of education), **IE**(Extent to which new business activity is related to their prior work experience), **WE**(Years of work experience), **EE**(Prior experience as founder)	Both	Observational
DeTienne & Chandler (2007)	95	US	**NVI**(Number of opportunities identified)	**EE**(Number of previous ventures founded), **WE**(Number of previous jobs), **IE**([1]Experience in Retail, [2]Experience in Professional Services, [3]Experience in Food Services, [4]Experience in Agriculture)	Both	Experimental
DeTienne & Chandler (2007)	189	US	**OB1**(Respondents' assessment of the degree to which their initial product service is new to the world)	**EE**(Years of experience in prior entrepreneurial ventures), **IE**([1]Number of years of experience in current industry, [2]Similarity of customers in current venture with customers in prior experiences, and [3]Similarity of technical duties in current venture with prior experiences)	Both	Observational
Dimov (2003)	22	US	**OB1**(Willingness to undertake nascent activities for [3] different scenarios)	**IE**(Knowledge of enterprise software management industry)	Prior Knowledge	Experimental
Dimov (2010)	195	US	**OB3**(Respondents' assessed likelihood that	**EE**(Number of businesses they helped	Human	Observational

Author(s)	Sample Size	Country	EOI Construct Label(s)	Human Capital Construct Operationalization(s)	Prior Knowledge or Human Capital	Observational or Experimental Study
(*PSED I data; overlaps with other studies based on PSED I data*)			the business will achieve milestones and be operational in 5 years, that they can successfully complete the tasks required to pursue the opportunity, and that the venture will succeed regardless of who owns and operates it)	start), **IE**(Years working in new business' industry), **WE**(Years of work experience), **EK**(Educational attainment)	Capital	
Dohse & Walter (2012)	1,816	Germany	**OB1**(Whether respondent had identified a business idea with market potential)	**WE**(Months as wage employee)	Human Capital	Observational
Escamilla Salazar, Caldera Gonzalez, & Cruz del Castillo (2014)	9,086	8 Latin American Countries	**OB3**(Respondents believe there are good opportunities to start a firm in the area where they live within the next 6 months)	**EK(**Educational attainment)	Human Capital	Observational
Escamilla Salazar, Caldera Gonzalez, & Cruz del Castillo (2014)	7,645	8 Latin American Countries	**OB3**(Respondents believe there are good opportunities to start a firm in the area where they live within the next 6 months)	**EK(**Educational attainment)	Human Capital	Observational
Farmer, Yao, & Kung-Mcintyre (2011)	167	US	**NVI(**Has engaged in deliberate/systematic search for new venture ideas and explored the ideas)	**EE**(Prior startup experience), **WE**(Work experience), **EK(**Educational attainment)	Human Capital	Observational
Farmer, Yao, & Kung-Mcintyre (2011)	222	China	**NVI(**Has engaged in deliberate/systematic search for new venture ideas and explored the ideas)	**EE**(Prior startup experience), **WE**(Work experience), **EK(**Educational attainment)	Human Capital	Observational
Farmer, Yao, & Kung-Mcintyre (2011)	174	Taiwan	**NVI(**Has engaged in deliberate/systematic search for new venture ideas and explored the ideas)	**EE**(Prior startup experience), **WE**(Work experience), **EK(**Educational attainment)	Human Capital	Observational
Frederiks, Englis, Ehrenhard, & Groen (2019)	120	Netherlands	**NVI**(Expert raters' assessed quality of new venture idea*)	**EE**(Prior entrepreneurial experience)	Prior Knowledge	Experimental
Frederiks, Englis, Ehrenhard, & Groen (2019)	279	US	**NVI**(Expert raters' assessed quality of new venture idea*)	**EK(**Educational attainment), **EE**(Ever started a business), **WE**([1]Full-time paid work experience, [2]Years of management experience), **IE**([1]Industry experience (with customers, competitors, and manufacturers/suppliers), [2]Knowledge of market, and [3]Knowledge of technology)	Prior Knowledge	Experimental
Foo (2010)	74	US	**NVI**(Expert raters' assessed quality of new venture idea generated by respondent*)	**WE**(Years of work experience)	Prior Knowledge	Observational
Fuentes Fuentes, Ruiz	241	Spain	**OB3**(Number of potential new business	**EE**(Number of years as entrepreneur),	Both	Observational

Author(s)	Sample Size	Country	EOI Construct Label(s)	Human Capital Construct Operationalization(s)	Prior Knowledge or Human Capital	Observational or Experimental Study
Arroyo, Bojica, & Fernandez Perez (2010)			opportunities recognized by respondent from set of ideas generated during the past year)	**IE**(Prior experience in the sector)		
Gabrielson & Politis (2012)	291	Sweden	**NVI**(Number of new ideas that could lead to a business generated by respondent in previous year)	**EE**(Number of ventures founded), **EK(**Years of education), **WE**([1] Longest number of years worked in a particular industry, [2]Longest number of years worked in a particular function, [3]Number of industries with experience in, and [4]Number of work functions with experience in)	Human Capital	Observational
Geissler, Jahn, Loebel, & Zanger (2011)	235	Germany	**NVI**(Number of opportunities recognized in prior year), **OB1**([1] Expected financial return from most salient opportunity they had identified the year before, and [2]Expected satisfaction from most salient opportunity they had identified the year before, [3]Extent to which respondent intended to pursue identified opportunity)	N/A	N/A	Observational
Gibbs (2009)	232	US	**OB1**(Number of opportunities recognized by respondent worth pursuing)	**WE**(Years of business experience), **EK(**Educational attainment)	Prior Knowledge	Observational
Gielnik et al. (2015)	384	Uganda	**OB1**(Number of opportunities identified, that are promising, and that respondent has committed time and resources in past three months)	**WE**(Present or past employment), **EE**(Current business owner or founded business in the past)	Human Capital	Experimental
Gielnik, Frese, Graf, & Kampschulte (2012)	98	Uganda	**NVI**([1]Number of ideas to start a new business or extend current one, [2]Expert raters' assessed originality of idea*)	**EK(**Index of number of years in school and educational attainment), **EE**(Number of previous startups)	Both	Experimental
Gielnik, Kramer, Kappel, & Frese (2014)	100	South Africa	**OB1**(Index of number of opportunities identified and pursued by respondent in past five years)	**EE**([1]Prior self-employment, [2]Years of entrepreneurship experience)	Prior Knowledge	Observational
Gish, Wagner, Grégoire, & Barnes (2019)	101	US	**OB3**(Respondents' confidence that someone could turn idea in the case study into successful business)	**EK(**Educational attainment), **EE**([1]Years of self-employment, [2]Number of businesses started), **IE**(Prior knowledge of the technology)	Both	Experimental
Gish, Wagner, Grégoire, & Barnes (2019)	73	US	**NVI**([1]Number of new venture ideas generated by respondent, [2]Expert coders' assessment of whether the respondent's idea seems logical and an attractive application of the presented technology*),	**WE**(Years of work experience)	Both	Experimental

Author(s)	Sample Size	Country	EOI Construct Label(s)	Human Capital Construct Operationalization(s)	Prior Knowledge or Human Capital	Observational or Experimental Study
			OB3(Respondents' confidence that someone could turn idea described in the case study into successful business)			
Glover (2017)	150	US	**NVI**(Number of new venture opportunities identified)	**EE**(Current entrepreneur), **IE**(Experience in the grocery industry), **EK**(Number of years of college education)	Prior Knowledge	Observational
Goktan & Gunay (2011)	178	US & Turkey	**OB3**(Respondent considers the new venture idea described in the case study as: (a) an opportunity, (b) worth considering, and (c) feasible given the situation [items from Keh et al. 2002])	**WE**(Years of work experience)	Human Capital	Experimental
Goniadis & Varsakelis (2012)	434	Greece	**OB1**(Has recognized market opportunities for her invention/patent)	**EE**(Prior entrepreneurship experience)	Human Capital	Observational
Gonzalez & Husted (2011)	174	Mexico	**NVI**([1]Number of opportunities listed by respondent without evaluating their potential success, [2]Expert raters' assessment of the innovativeness of opportunities identified*)	**EK(**Years of education), **WE**([1]Years of work experience, [2]Number of industries with experience in), **IE**(Prior knowledge of customer needs), **EE**(Number of ventures founded)	Human Capital	Observational
Gordon (2007)	63	Australia	**NVI**(Number of new venture ideas generated), **OB3**(Number of opportunities recognized out of set of new venture ideas generated)	**IE**(Years of ICT industry experience), **EK(**Educational attainment)	Prior Knowledge	Observational
Grégoire & Shepherd (2012)	98	US	**OB3**(Fit between means of supply and target market, and feasibility of introducing these means of supply into the market of the idea described in a short case study)	**EK(**Educational attainment), **IE**([1] Knowledge of technology, [2] Knowledge of market), **WE**(Length of work experience), **EE**(Number of ventures previously founded)	Both	Experimental
Grégoire & Shepherd (2012)	51	US	**OB3**(Fit between means of supply and target market, and feasibility of introducing these means of supply into the market of the idea described in a short case study)	**EK(**Educational attainment), **IE**([1] Knowledge of technology, [2] Knowledge of market), **WE**(Length of work experience), **EE**(Number of ventures previously founded)	Both	Experimental
Grégoire, Shepherd, & Lambert (2010)	6	US	**OB3**([1]Degree of alignment between means of supply and target market, [2]General feasibility of idea, [3]General desirability of idea described in a short case study), **OB1**(Would invest time and resources to further explore the idea; *OB1 measured after OB3*)	**IE**([1]Prior knowledge of technologies, [2]Prior knowledge of underlying scientific / engineering principles, [3]Prior knowledge of target market, [4]Prior knowledge of market problems)	Both	Experimental

Author(s)	Sample Size	Country	EOI Construct Label(s)	Human Capital Construct Operationalization(s)	Prior Knowledge or Human Capital	Observational or Experimental Study
Grégoire, Shepherd, & Lambert (2010)	24	US	**OB3**([1]Degree of alignment between means of supply and target market, [2]General feasibility of idea, [3]General desirability of idea described in a short case study), **OB1**(Would invest time and resources to further explore the idea; *OB1 measured after OB3*)	**IE**([1]Prior knowledge of technologies, [2]Prior knowledge of underlying scientific / engineering principles, [3]Prior knowledge of target market, [4]Prior knowledge of market problems)	Prior Knowledge	Experimental
Grichnik, Smeja, & Welpe (2010)	99	Germany	**OB3**(How positive and how promising respondents judged the proposed product innovation to be and to what extent this situation is judged as an opportunity/chance), **OB1**(Percentage of own savings, a potential loan, and leisure time respondents would be willing to invest/give up in order to exploit the new product innovation; *OB1 measured after OB3*)	N/A	N/A	Experimental
Grichnik, Smeja, & Welpe (2010)	84	Germany	**OB3**(How positive and how promising respondents judged the proposed product innovation to be and to what extent this situation is judged as an opportunity/ chance), **OB1**(Percentage of own savings, a potential loan, and leisure time respondents would be willing to invest/give up in order to exploit the new product innovation; *OB1 measured after OB3*)	N/A	N/A	Experimental
Gruber, MacMillan, & Thompson (2012)	133	Germany	**NVI**(Number of alternative opportunities analyzed by respondents prior to launch)	**EE**(Previous experience founding new venture), **IE**([1]Technological experience, [2] Marketing experience), **WE**(Management experience)	Both	Observational
Gruber, MacMillan, & Thompson (2013)	496	Germany & US	**NVI**([1]Number of alternative opportunities considered prior to market entry, [2]Variety of opportunities identified prior to market entry), **OB1**(Respondents' expected value of their venture in 5 years)	**EE**(Prior experience founding new venture), **IE**([1]Level of technological experience, [2]Level of marketing experience), **WE**(Number of industries with experience in)	Prior Knowledge	Observational
Hack, Bieberstein, & Kraiczy (2016)	107	Germany	**OB3**(Respondent considers the new venture idea in case study as: (a) an opportunity, (b) worth considering, and (c) feasible given the situation [items from Keh et al. 2002])	**EE**(Has started venture in the past)	Human Capital	Experimental

Author(s)	Sample Size	Country	EOI Construct Label(s)	Human Capital Construct Operationalization(s)	Prior Knowledge or Human Capital	Observational or Experimental Study
Henao-García, Arias-Perez, & Lozada-Barahona (2018)	3,394	Colombia	**OB3**(Respondents believe there are good opportunities to start a firm in the area where they live within the next 6 months)	**EK(**Educational attainment)	Human Capital	Observational
Holtz (2017)	183	Germany	**NVI**([1]Number of recognized opportunities, [2]Expert raters' assessment of the quality of the opportunity selected by respondent*)	**EK(**Number of years of education), **EE**(Number of startups founded), **IE**(Technological experience), **WE**(Number of industries with experience in)	Both	Experimental
Hsieh & Kelley (2016) (*overlaps with Hsieh, 2009*)	324	Taiwan	**OB1**(Respondents' perceived newness of product/service of the opportunity they recognized)	**EK(**Educational attainment), **IE**(Prior experience with customers, competitors, and manufacturers/ suppliers), **EE**(Has previously founded a new venture)	Both	Observational
Hsieh (2009)	248	Taiwan	**NVI**(Number of opportunities identified)	**WE**(Has work experience)	Both	Observational
Ivanova, Treffers, & Langerak (2018)	191	Netherlands	**OB1**([1]First-person desirability of opportunity, [2]First-person feasibility of opportunity)	**IE**([1]Knowledge of the technology, [2]Knowledge of the market), **EE**(Has self-employment experience)	Prior Knowledge	Experimental
Jacquemin & Janssen (2012)	152	Belgium	**OB1**(Respondents' assessment of whether new regulations had generated opportunities for their venture)	**IE**([1]Has legal background; [2]Knowledge of regulations), **EK(**Educational attainment)	Prior Knowledge	Observational
Karim (2013)	86,670	UK	**OB3**(Respondents believe there are good opportunities to start a firm in the area where they live within the next 6 months)	**EK(**Educational attainment)	Human Capital	Observational
Karlesky (2015)	174	US	**NVI**(Number of opportunities identified)	**IE**(Prior knowledge of the technology and market), **WE**(Years of full time work experience), **EE**(Number of ventures launched in the past)	Prior Knowledge	Experimental
Karlesky (2015)	102	US	**NVI**(Number of opportunities identified), **OB3**(Feasibility and fit between means of supply and target market from the perspective of healthcare providers [items from Grégoire et al. 2010])	**IE**(Prior knowledge of the technology and market), **WE**(Years of full time work experience), **EE**(Number of ventures launched in the past)	Prior Knowledge	Experimental
Karlesky (2015)	123	US	**NVI**([1] Number of opportunities identified, [2]Expert raters' assessment of the innovativeness of opportunities identified*)	**IE**(Prior knowledge of the technology and market), **WE**(Years of full time work experience), **EE**(Number of ventures launched in the past)	Prior Knowledge	Experimental
Khalid & Sekiguchi (2018)	131	Japan	**NVI**(Expert raters' assessment of idea's [1]Desirability*, [2]Alignment with market needs and means of supply*, and [3]Feasibility*; [4]Index of fit, desirability, and feasibility of ideas*)	**WE**(Work experience)	Human Capital	Experimental

Author(s)	Sample Size	Country	EOI Construct Label(s)	Human Capital Construct Operationalization(s)	Prior Knowledge or Human Capital	Observational or Experimental Study
Khalid & Sekiguchi (2018)	120	Pakistan	**NVI**(Expert raters' assessment of idea's [1]Desirability*, [2]Alignment with market needs and means of supply*, and [3]Feasibility*; [4]Index of fit, desirability, and feasibility of ideas*)	**WE**(Work experience)	Human Capital	Experimental
Kier & McMullen (2018)	506	US	**NVI**([1]Number of new venture ideas generated, [2]Expert raters' assessment of the quality of ideas generated*)	**IE**(Familiarity with facial recognition technology), **EK(**Educational attainment), **EE**(Number of startups attempted in the past)	Both	Experimental
Ko & Butler (2006)	197	Hong Kong	**OB3**(Number of business ideas each month, percentage of them that are innovative, percentage of innovative ideas that are feasible and desirable)	**IE**(Knowledge about market, technology, and means of supply), **WE**(Years of industry experience), **EE**(Number of firms previously founded)	Prior Knowledge	Observational
Koch (2017)	286	Germany	**NVI**([1]Number of unique business opportunities generated, [2]Expert raters' assessment of potential feasibility and profitability of opportunities generated*, [3] Expert raters' assessment originality of each opportunity generated*)	**EE**(Number of previous startups), **IE**(Knowledge of the technology)	Both	Experimental
Kollmann, Stöckmann, & Kensbock (2017)	204	Germany	**OB1**([1]How positive and how promising respondents judged the plans for their nascent venture to be, and to what extent this scenario would be a realistic alternative to wage employment [from Grichnik et al., 2010], [2]Likelihood of using chosen opportunity to become an entrepreneur in the future, [3]Respondents' assessment of the innovativeness of their venture's business model; *OB1 measured after OB3*)	**EE**(Entrepreneurship experience)	Human Capital	Experimental
Kollmann, Stöckmann, & Kensbock (2017)	355	Germany	**OB1**([1]How positive and how promising respondents judged the plans for their nascent venture to be, and to what extent this scenario would be a realistic alternative to wage employment [from Grichnik et al. 2010], [2]Respondents' assessment of the desirability of the new venture they are trying to start [adapted from Krueger 1993], [3] Respondents'	**EE**(Entrepreneurship experience)	Human Capital	Experimental

Author(s)	Sample Size	Country	EOI Construct Label(s)	Human Capital Construct Operationalization(s)	Prior Knowledge or Human Capital	Observational or Experimental Study
			assessment of the feasibility of the new venture they are trying to start [adapted from Krueger 1993], [4] Respondents' assessment of the innovativeness of their venture's business model; *OB1 measured after OB3*)			
Kolvereid & Isaksen (2017) (*overlaps with Alsos et al., 2006*)	207	Norway	**OB1**(Respondents' [1]Growth expectations for, and [2]Perceived novelty of, their nascent venture)	**EK(**Educational attainment)	Prior Knowledge	Observational
Lee, Wong, Chen, & Chua (2005)	1,638	Hong Kong	**OB3**(Respondents believe there are good opportunities to start a firm in the area where they live within the next 6 months)	**EK(**Post-secondary degree)	Prior Knowledge	Observational
Lee, Wong, Chen, & Chua (2005)	1,977	Taiwan	**OB3**(Respondents believe there are good opportunities to start a firm in the area where they live within the next 6 months)	**EK(**Post-secondary degree)	Prior Knowledge	Observational
Li & Gustafsson (2012)	137	China	**OB1**(Respondents' assessment of the (a) priority of R&D, (b) importance of patent, (c) product/service uniqueness, (d) competitive pressure [reversed] of their nascent venture)	**EK(**Educational attainment)	Both	Observational
Li, Wang, & Liang (2015)	206	China	**OB1**(Respondent will research the entrepreneurial plan and will not miss the opportunity presented in experiment [adapted from Keh et al. 2002])	**EE**(Number of months of entrepreneurship experience)	Prior Knowledge	Experimental
Long, Xia, & Hu (2017)	321	China	**OB1**(Respondents' assessment of the [1] uniqueness, [2] positioning, and [3] market category of their nascent venture's product/service)	**EK(**Educational attainment)	Prior Knowledge	Observational
Makkink (2017)	69	Netherlands	**OB1**(Attractiveness/ viability of opportunity specifically for the respondent)	**IE**(Knowledge of in-situ plating), **EK(**Educational attainment), **EE**(Years of entrepreneurial experience)	Both	Experimental
Marvel & Lumpkin (2017)	146	US	**OB1**(Respondents' assessed [1] innovativeness of their venture's product at launch, [2]sales expectations by year 3)	**IE**([1]Prior knowledge of demand, [2]Prior knowledge of the technology), **EK(**Educational attainment), **EE**(Has founded another venture before)	Both	Observational
McCann (2017) (*PSED I data; overlaps with other studies based on PSED I data*)	422	US	**OB3**(Likelihood that respondent's nascent venture will be operating in the future, regardless of who owns and operates the firm), **OB1**(Respondents' expectations of	**EE**(Respondent previously involved in startup effort), **IE**(Years of experience in similar industry), **EK(**Years of education)	Both	Observational

Author(s)	Sample Size	Country	EOI Construct Label(s)	Human Capital Construct Operationalization(s)	Prior Knowledge or Human Capital	Observational or Experimental Study
			their nascent venture's [1] year 1 sales, [2] year 5 sales; *OB1 measured at the same time as OB3 using the same questionnaire; OB1 questions appear before OB3 questions*)			
McKenna, Zacher, Ardabili, & Mohebbi (2016)	204	Iran	**OB1**(Number of opportunities identified, considered promising, and committed time and resources in the past 6 months [not related to current job])	**EK(**Educational attainment), **WE**(Years of job tenure), **EE**(Respondent previously involved in starting new business)	Human Capital	Observational
Michl, Spörrle, Welpe, Grichnik, & Picot (2012)	344		**OB3**(How positive and promising respondents judged the situation described in case study to be, and to what extent this scenario would be a realistic alternative to wage employment [from Grichnik et al. 2010])**, OB1**([1]Likelihood of success if respondent pursued the new venture idea, [2]Profit potential if respondent pursued the new venture idea, [3]How likely respondent is to pursue the new venture idea in the future; *OB1 measured after OB3*)	**EE**(Has entrepreneurship experience)	N/A	Experimental
Mitteness, Baucus, & Sudek (2012)	57	US	**OB3**(Respondents' assessment of strength of other entrepreneurs' new venture ideas)	**IE**([1]Operating experience in the venture's industry, [2]Investment experience in the venture's industry), **EK(**Educational attainment), **EE**([1]Startup experience, [2]Entrepreneurship experience in the venture's industry)	Prior Knowledge	Observational
Mueller & Shepherd (2016)	114	US	**NVI**(Number of times respondent made reference to characteristics of expert opportunity prototypes in generating or evaluating new venture ideas*)	**EK(**[1]4-year degree, [2]Graduate degree), **EE**([1]Number of failures as entrepreneur, [2]Number of businesses respondent owned or helped launch)	Prior Knowledge	Experimental
Niammuad, Napompech, & Suwanmaneepong (2014)	389	Thailand	**OB1**(Respondents' assessment of their nascent venture's feasibility and fit between means of supply and market needs [items from Grégoire et al. 2010])	**IPE**(Industry-specific experience)	Human Capital	Observational
Noack (2014)	117	US	**OB1**(Respondents' assessment of the new venture's environmental uncertainty [reverse coded])	**EE**(Number of previous ventures founded), **EK(**Educational attainment)	Prior Knowledge	Observational
Obschonka,	200	Germany	**OB1**(Participated in development of	**EE**(Early commercial activities in	Human	Observational

Author(s)	Sample Size	Country	EOI Construct Label(s)	Human Capital Construct Operationalization(s)	Prior Knowledge or Human Capital	Observational or Experimental Study
Silbereisen, & Schmitt-Rodermund (2012)			business idea to commercialize his/her research)	adolescence)	Capital	
Omri & Boujelbene (2015)	225	Tunisia	**NVI**(Number of opportunities for creating or purchasing a business identified prior to creation of entrepreneurial team)	**EK(**Educational attainment), **EE**(Has prior entrepreneurial experience), **WE**(Years of management experience)	Human Capital	Observational
Pathak, Xavier-Oliveira, & Laplume (2013)	31,890	12 Baltic Countries	**OB3**(Respondents believe there are good opportunities to start a firm in the area where they live within the next 6 months)	**EK(**Educational attainment)	Human Capital	Observational
Politis, Winborg, & Dahlstrand (2012)	325	Sweden	**OB1**(Respondents' assessment of degree of novelty of their new venture's product/service)	**EE**(Number of ventures launched), **IE**(Years of experience in industry in which firm operates)	Human Capital	Observational
Prandelli, Pasquini, & Verona (2016)	137	Italy	**NVI**(Expert raters' assessment of the desirability, feasibility, and market alignment of idea proposed by respondent*)	**IE**(Technical expertise), **EE**(Prior self-employment experience)	Both	Experimental
Ramos-Rodríguez, Medina-Garrido, Lorenzo-Gómez, & Ruiz-Navarro (2010)	27,880	Spain	**OB3**(Respondents believe there are good opportunities to start a firm in the area where they live within the next 6 months)	**EK(**Educational attainment)	Human Capital	Observational
Roach & Sauermann (2015)	4,282	US	**OB1**(Respondents' assessment of commercial value of their research)	**EE**(Prior employment in startup)	Human Capital	Observational
Roberts, Campbell, & Vijayasarathy (2016)	248	US	**NVI**([1]Idea set volume: Number of business ideas considered in past 6 months, [2]Idea set variety: Number of domains in which respondent has generated business ideas)	**EK(**Educational attainment), **IE**(Years working in firm)	Knowledge	Observational
Robinson & Hayes (2012)	146	US	**OB3**(Likelihood of success of opportunity described in experiment), **OB1**(Respondents would consider joining venture team if they had money to invest; *OB1 measured after OB3*)	**EK(**Educational attainment), **IE**(Years of work in inner-city area)	Prior Knowledge	Experimental
Robinson (2010)	612	US	**OB3** (Risk perception measure from Keh et al. 2002 [reverse coded]), **OB1**(Respondent would forgo other options and quit job to start the new venture proposed in experiment; *OB1 measured after OB3*)	**EK(**Educational attainment)	Human Capital	Experimental
Roundy, Harrison, Khavul, & Perez-	633	US	**OB1**([1]Respondents' assessment whether environmental changes represent	**EK(**Educational attainment)	N/A	Observational

Author(s)	Sample Size	Country	EOI Construct Label(s)	Human Capital Construct Operationalization(s)	Prior Knowledge or Human Capital	Observational or Experimental Study
Nordtvedt (2018)			opportunity for their firm, [2]Respondents' perceived uncertainty of how changes will affect their firm [reverse coded])			
Ruiz-Arroyo, Sanz-Espinoza, & del Mar Fuentes-Fuentes (2015)	199	Spain	**OB3**(Number of potential new business opportunities recognized by respondent from set of ideas generated during the past year)	**EE**([1]Number of prior successful ventures founded, [2]Number of prior failed ventures founded)	Prior Knowledge	Observational
Sahai & Frese (2017)	73	Singapore	**NVI**([1]Number of complete and unique business ideas generated by respondent, [2]Expert rater's assessment of the innovativeness of ideas generated by respondent*)	**EE**(Prior entrepreneurship experience)	Both	Experimental (Observational in terms of NVI generation)
Sardeshmukh & Corbett (2011)	119	US	**OB1**(Number of opportunities pursued since succession and number of opportunities currently under consideration)	**IE**([1] Years worked within family firm (internal), [2]Internal human capital intensity), **WE**([1]Years of external management experience, [2]External work experience intensity), **EK(**Years of education)	Human Capital	Observational
Sardeshmukh & Smith (2010)	306	US	**NVI(**Index of number of opportunities recognized and expert raters' assessment of their quality and originality*)	**EK(**Years in college)	Prior Knowledge	Observational
Sarma (2018)	227	US	**NVI**([1]Number of new venture ideas generated, [2]Expert raters' assessed quality of ideas generated*)	**IE**(Knowledge of the technology), **PE**(Number of years of work experience), **EE**(Has launched venture before)	Both	Experimental
Sarma (2018)	227	US	**NVI**([1]Number of new venture ideas generated, [2]Expert raters' assessed quality of ideas generated*)	**IE**(Knowledge of the technology), **PE**(Number of years of work experience), **EE**(Has launched venture before)	Both	Experimental
Scheaf (2018)	172	US	**OB3**(Beliefs about the general feasibility and alignment between means of supply and market needs of opportunity presented in case study [from Grégoire et al. 2010]), **OB1**([1]Estimated personal gains from pursuing the opportunity, [2]Estimated personal losses from pursuing the opportunity [reverse coded], [3]Perceived personal feasibility of pursuing the opportunity; *OB1 measured one week after OB3*)	N/A	Both	Experimental

Author(s)	Sample Size	Country	EOI Construct Label(s)	Human Capital Construct Operationalization(s)	Prior Knowledge or Human Capital	Observational or Experimental Study
Scheaf, Loignon, Webb, Heggestad, & Wood (2020)	145	US	**OB3**([1]Beliefs about the opportunity's general feasibility and fit/alignment between solution proposed in case study and market needs [from Grégoire et al. 2010], [2]Respondent considers the new venture idea as an opportunity, worth considering, and generally feasible [from Keh et al. 2002], [3] Risk perception measure from Keh et al. 2002 [reverse coded]), **OB1**([1]Estimated personal gains from pursuing the opportunity, [2]Estimated personal losses from pursuing the opportunity [reverse coded], [3]Perceived personal feasibility of pursuing the opportunity; *OB1 measured after OB3 using different questionnaire*)	N/A	N/A	Experimental
Schmitt, Rosing, Zhang, & Leatherbee (2017)	121	Chile	**NVI**(Number of opportunities recognized in past 4 weeks)	**EE**(Number of businesses previously founded or co-founded), **EK(**Educational attainment)	Human Capital	Observational
Semasinge & Davidsson (2009)	727	Australia	**OB1**(Respondents' assessment of their new venture idea's [1]product/service innovativeness, [2]method of production innovativeness, [3]target market/customer innovativeness, [4]promotion innovativeness [items adapted from Dahlqvist & Wiklund 2012])	**IE**(Years of experience in the venture's industry), **WE**(Years of general management experience), **EK(**Educational attainment), **EE**(Has launched venture before)	Human Capital	Observational
Semasinge, Davidsson, & Steffens (2011)	493	Australia	**OB1**(Respondents' assessment of novelty of venture idea they are trying to launch)	**IE**(Years of experience in the venture's industry)	Human Capital	Observational
Sepúlveda & Bonilla (2014)	9,384	5 Latin American Countries	**OB3**(Respondents believe there are good opportunities to start a firm in the area where they live within the next 6 months)	**EK(**Educational attainment)	Prior Knowledge	Observational
Shepherd & DeTienne (2005)	78	US	**NVI**([1]Number of opportunities identified by respondent, [2]Expert raters' assessment of the innovativeness of opportunities generated by respondent*)	**IE**(Prior knowledge of customer problems)	Prior Knowledge	Experimental
Shu, Ren, & Zheng (2018)	212	China	**NVI**(Number of opportunities discovered in past 3 years)	**EK(**Educational attainment), **IE**(Prior knowledge of technology presented and market of interest)	Prior Knowledge	Observational
Singh, Hills, Hybels,	256	US	**NVI**(Number of new venture ideas that	**EK(**Educational attainment), **IE**(Years	Prior	Observational

Author(s)	Sample Size	Country	EOI Construct Label(s)	Human Capital Construct Operationalization(s)	Prior Knowledge or Human Capital	Observational or Experimental Study
& Lumpkin (1999)			could lead to potential opportunities recognized in past year), **OB3**(Number of potential new venture opportunities recognized in past year)	of experience in the industry prior to firm founding)	Knowledge	
Smith, Sardeshmukh, & Combs (2016)	137	US	**NVI**(Number of business ideas recognized)	**EE**(Experience working on the family business)	Human Capital	Experimental
Stuetzer, Obschonka, Brixy, Sternberg, & Cantner (2014)	34,549	Germany	**OB3**(Respondents believe there are good opportunities to start a firm in the area where they live within the next 6 months)	**EK(**Years of education)	Human Capital	Observational
Sundararajan (2008)	27	US	**NVI**(Expert raters' assessment of quality of business opportunity selected by respondent who was asked to generate 10 ideas and select the best one*), **OB1**(Respondents' willingness to undertake nascent activities for the opportunity they selected)	**IE**(Knowledge of material science, chemistry, and nanotechnology), **EE**(Prior experience founding new ventures, managing the family business, or developing a new product)	Prior Knowledge	Experimental
Sundararajan (2008)	90	US	**OB1**(Respondents' willingness to undertake nascent activities for the opportunity they selected)	**IE**(Knowledge of material science, chemistry, and nanotechnology), **EE**(Prior experience founding new ventures, managing the family business, or developing a new product)	Prior Knowledge	Experimental
Sundararajan (2008)	34	US	**OB1**(Respondents' willingness to undertake nascent activities for the opportunity they selected)	**IE**(Knowledge of material science, chemistry, and nanotechnology), **EE**(Prior experience founding new ventures, managing the family business, or developing a new product)	Prior Knowledge	Experimental
Taktak & Triki (2015)	320	Tunisia	**OB3**(Respondents' assessment of the potential of the opportunity presented in case study)	**EK(**Educational attainment)	Prior Knowledge	Experimental
Tumasjan & Braun (2012)	254	UK	**NVI**([1] Number of opportunities identified by respondents to solve customers' problems, [2]Expert raters' assessment of the innovativeness of opportunities identified by respondent*)	**EK(**Educational attainment), **EE**(Years of entrepreneurship experience), **IE**(Has work experience in footwear industry)	Prior Knowledge	Experimental
Ucbasaran, Westhead, & Wright (2009)	630	UK	**NVI**(Number of opportunities for creating or purchasing a business identified in past 5 years), **OB1**(Respondents' assessment about the innovativeness of their venture)	**EE**([1]Number of businesses founded or purchased, [2]Number of businesses founded or purchased that failed), **IE**(Technical capability), **WE**(Managerial capability), **EK(**Years of education)	Both	Observational

Author(s)	Sample Size	Country	EOI Construct Label(s)	Human Capital Construct Operationalization(s)	Prior Knowledge or Human Capital	Observational or Experimental Study
Ucbasaran, Westhead, Wright, & Flores (2010) (*overlaps with Ucbasaran et al., 2009*)	576	UK	**NVI**(Number of opportunities for creating or purchasing a business identified in past 5 years), **OB1**(Respondents' assessment of likelihood of success of their venture relative to that of similar ventures)	**EE**([1]Novice entrepreneur [reverse coded], [2]Repeat entrepreneur without failure experience, [3]Repeat entrepreneur with failure experience, [4]Total number of new ventures founded), **EK(**Educational attainment)		
Uygur (2009)	179	US	**OB3**(Respondents' assessment of the attractiveness of the opportunity presented in experiment)	**EE**([1]Number of startups founded, [2]Number of startups worked for), **IE**([1]Experience with Netflix, [2]Experience with BBS)	Both	Experimental
Vandor & Franke (2016)	462	Austria	**NVI**(Expert raters' assessment of the profit potential of new venture ideas generated by respondents*)	**EE**(Has founded or co-founded a venture before), **IE**(Expertise in media industry)	Both	Experimental
Vandor & Franke (2016)	96	Austria	**NVI**(Expert raters' assessment of the profit potential of new venture ideas generated by respondents*)	**EK(**Educational attainment), **EE**(Has tried to launch new business before), **IE**([1]Years of work experience in retail marketing, [2]Years of work experience in supermarkets)	Both	Experimental
Vilanova & Vitanova (2020) (*PSED I data; overlaps with other studies based on PSED I data*)	572	US	**OB1**([1]Respondents' certainty that the respondent's nascent venture will be successful in procuring the necessary resources and reach key milestones, [2]Expects the competition to be strong for the nascent venture [reverse coded], [3]Respondents' believe their nascent venture to have a competitive advantage, [4]Respondents' assessment of the innovativeness of their new venture's products/services, [5]Expected revenues in first year, [6]Respondents' beliefs about whether their skills and ability, experience, and effort will help them launch the nascent venture)	**EE**(Number of previous startups), **IE**(Years of work experience in the venture's industry), **EK(**Educational attainment)	Human Capital	Observational
Walter, Parboteeah, & Walter (2011)	703	Germany	**OB1**(Respondent has perceived a business idea with market potential)	**WE**(Months as a wage employee)	Human Capital	Observational
Walter, Parboteeah, & Walter (2011)	827	Germany	**OB1**(Respondent has perceived a business idea with market potential)	**WE**(Months as a wage employee)	Human Capital	Observational
Wang, Ellinger, & Wu (2013)	268	Taiwan	**OB3**(Respondents' assessment of the opportunities present in their industry for new product development, technological	**WE**([1]Prior knowledge of their field, [2]Years of employment in the high tech industry)	Prior Knowledge	Observational

Author(s)	Sample Size	Country	EOI Construct Label(s)	Human Capital Construct Operationalization(s)	Prior Knowledge or Human Capital	Observational or Experimental Study
			innovation, and growth)			
Wong & Lee (2005)	9,735	Singapore	**OB3**(Respondents believe there are good opportunities to start a firm in the area where they live within the next 6 months)	**EK(**University education)	Human Capital	Observational
Wood, Bylund, & Bradley (2016)	126	US	**OB1**(Respondents' assessment of attractiveness of opportunity specifically for them)	**EE**([1]Prior business failure, [2]Number of ventures launched before, [3]Years of entrepreneurship experience), **EK(**Educational attainment), **WE**(Years of work experience)	Human Capital	Experimental
Wood & Williams (2014)	62	US	**OB1**(Respondents' assessment of attractiveness of opportunity specifically for them)	**EK(**Educational attainment), **EE**(Years of entrepreneurship experience), **IE**([1]Knowledge of in-situ plating technology, [2]Knowledge of market needs for the technology)	Prior Knowledge	Experimental
Wood, Bradley, & Artz (2014)	1,066	Kenia, Burundi, & Indonesia	**OB1**([1]Respondents' assessment of "the level of skills I have relative to competitors in this business" and confidence in "the level of resources I have compared to my competitors in this business"; [2]Respondents' assessed innovativeness of their product/service, its positioning, and its materials)	**EK(**Years of education), **IPE**(Has prior experience in the industry)	Human Capital	Observational
Wood, Williams, & Drover (2017)	143	US	**OB1**([1]Likelihood of purchasing the patent, paying a premium for it, and starting a business based on the technology, [2]Respondents' perceptions of risk of loss from choosing to invest in technology presented to them [reverse coded])	**EK(**Educational attainment), **IE**(Prior knowledge of technology), **WE**(Years of work experience), **EE**([1]Level of experience evaluating opportunities, [2]Years of entrepreneurship experience)	Prior Knowledge	Experimental
Wu (2004)	230	US	**NVI**(Number of new venture ideas considered in previous 3 months), **OB1**(Respondents' sales expectations for their nascent venture in year 5)	**EE**(Has launched new venture before), **EK(**Educational attainment)	Both	Observational
Yan (2010)	207	US	**OB3**(Respondent considers the new venture idea as an opportunity, worth considering, and generally feasible [from Keh et al. 2002])	**EE**(Has entrepreneurship experience), **WE**(Years of work experience)	Human Capital	Experimental
Ye (2012)	39	US	**OB3**(Respondent's assessment of expected value of opportunity described in case study), **OB1**(Likelihood respondent will	N/A	Prior Knowledge	Experimental

Author(s)	Sample Size	Country	EOI Construct Label(s)	Human Capital Construct Operationalization(s)	Prior Knowledge or Human Capital	Observational or Experimental Study
			pursue the opportunity in case study; *OB1 measured in the same questionnaire as OB3, OB1 questions appear before OB3*)			
Ye (2012)	89	US	**OB3**(Respondent's assessment of expected value of opportunity described in case study), **OB1**(Likelihood respondent will pursue the opportunity in case study; *OB1 measured in the same questionnaire as OB3, OB1 questions appear before OB3*)	**IE**(Treatment group was provided with knowledge of industry, market, ways to serve the market, customer problems, and the technology specific to the opportunity in case scenario)	Prior Knowledge	Experimental
Zhai (2007)	285	China & Canada	**OB3**(Risk perception measure [reverse coded] [from Keh et al. 2002]), **OB1**(Respondent considers business idea presented in case as: an opportunity, worth considering, personally feasible and personally desirable given the situation [adapted from Keh et al. 2002]; *OB1 measured after OB3*)	**EE**(Breadth of entrepreneurship experience), **EK(**Year/ standing in college)	Prior Knowledge	Experimental

EK = Education-based knowledge; WE = Work experience; EE = Entrepreneurship experience; IE = Industry experience; NVI = New venture ideas; OB3 = 3rd-person opportunity beliefs; OB1 = 1st-person opportunity beliefs; * = Only included in meta-regression analyses

TABLE A2. Coefficients for direct-effect model (see Figure 2a)

	Coefficient	SE	95% CI	*z* value	*p* value
GHC → OB3	0.04	0.02	-0.01 : 0.08	1.45	0.148
SHC → OB3	0.00	0.02	-0.05 : 0.04	-0.13	0.897
NVI → OB3	0.30***	0.06	0.17 : 0.42	4.62	0.000
Model fit: $\chi^2(2) = 30.83$; $p \leq 0.001$; CFI = 0.60; RMSEA = 0.01; SRMR = 0.05; N = 343,425					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

GHC = General Human Capital; SHC = Specific Human Capital; NVI = Ability to generate new venture ideas; OB3 = 3rd-Person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE A3. Coefficients for direct-effect model (see Figure 2b)

	Coefficient	SE	95% CI	*z* value	*p* value
GHC → OB1	0.02	0.02	-0.01 : 0.06	1.23	0.217
SHC → OB1	0.06***	0.01	0.04 : 0.09	4.38	0.000
NVI → OB1	0.19***	0.04	0.10 : 0.27	4.37	0.000
Model fit: $\chi^2(2) = 32.01$; $p \leq 0.001$; CFI = 0.63; RMSEA = 0.02; SRMR = 0.05; N = 32,020					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

GHC = General Human Capital; SHC = Specific Human Capital; NVI = Ability to generate new venture ideas; OB1 = 1st-Person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE A4. Coefficients for mediated-effect model (see Figure 3)

	Coefficient	SE	95% CI	*z* value	*p* value
GHC → NVI	0.07***	0.02	0.03 : 0.11	3.42	0.001
SHC → NVI	0.10***	0.02	0.07 : 0.14	5.61	0.000
NVI → OB1	0.25***	0.04	0.17 : 0.33	5.95	0.000
Model fit: $\chi^2(2) = 12.18$; $p \leq 0.01$; CFI = 0.87; RMSEA = 0.00; SRMR = 0.03; N = 32,020					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

GHC = General Human Capital; SHC = Specific Human Capital; NVI = Ability to generate new venture ideas; OB1 = 1st-Person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE A5. Coefficients for full-effect model (see Figure 4)

	Coefficient	SE	95% CI	*z* value	*p* value
GHC → NVI	0.06**	0.02	0.02 : 0.10	3.16	0.002
SHC → NVI	0.10***	0.02	0.07 : 0.14	5.55	0.000
NVI → OB3	0.38***	0.05	0.28 : 0.47	7.62	0.000
OB3 → OB1	0.50***	0.03	0.44 : 0.56	17.22	0.000
Model fit: $\chi^2(5) = 26.45$; $p \leq 0.001$; CFI = 0.94; RMSEA = 0.00; SRMR = 0.04; AIC = 9.99; N = 358,124					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

GHC = General Human Capital; SHC = Specific Human Capital; NVI = Ability to generate new venture ideas; OB3 = Favorability of 3rd-Person Opportunity Beliefs; OB1 = Favorability of 1st-Person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual; AIC = Akaike Information Criterion.

APPENDIX B

Post-hoc Analyses of Alternative Model Specifications

Several post-hoc analyses were conducted using more refined measures of human capital and the favorability of opportunity beliefs. The post-hoc analyses reveal additional insights. First, the results of replicating the MASEM analyses with models distinguishing between the different dimensions of GHC and SHC are reported in Figures B1a, B1b, B2, and B3 are broadly consistent with those reported in Figures 2a, 2b, 3, and 4. For example, the results of the mediated-effect model reported in Figure 3/Table A4 suggest that the association of both SHC and GHC with the ability to generate new venture ideas is significant, a finding consistent with the results reported in Figure B2/Table B3 where all four types of human capital are significantly correlated with new venture ideas. Likewise, the results reported in Figure 2b/Table A3 suggest that only SHC significantly predicts the favorability of 1st-person opportunity beliefs, while the effect of GHC is insignificant, which matches the results shown in Figure B1b below which suggest that only entrepreneurship experience and industry experience predict the favorability of 1st-person opportunity beliefs.

Second, the results of estimating the relationship between the favorability of 3rd-person opportunity beliefs and each dimension of the favorability of 1st-person opportunity beliefs are shown in Table B5. The overall model is statistically significant ($F = 5.68$; $p \leq 0.01$), which suggests that the four dimensions proposed by Scheaf et al. (2020) explain about 16 percent of the variation in the correlation between the favorability of 3rd- and 1st-person opportunity beliefs ($R^2_{Meta} = 0.16$), and this relationship is significant for the personal gain estimation and overall evaluation dimensions of 1st-person opportunity beliefs.

Third, to assess complementarity between human capital and the ability to generate new venture ideas, we combined human capital and ideas into a unidimensional latent variable "index" (see Figure B4/Table B6). In line with Jiang, Lepak, Hu, and Baer (2012), we compared the fit of our multi-dimensional model (Figure 4/Table A5) with the fit of the unidimensional model (Figure B4/Table B6). Because we are comparing the fit of two non-nested models, we cannot use the chi-square statistic; instead we rely on Akaike's information criterion (AIC) (Jiang et al., 2012). AIC measures parsimonious fit between two models, which represents the tradeoff between statistical fit and the number of parameters used in the model, with lower values of AIC suggesting better parsimonious fit. As the results shown in Table B6 illustrate, the multidimensional model in Figure 4/Table A4 has a higher CFI and lower SRMR and AIC indexes than the unidimensional model depicted in Figure 4/Table B6. Thus, the ability to generate new venture ideas and the two types of human capital are not complementary because the unidimensional model (Figure B6) in which they interact through the latent variable "index" to predict the favorability of opportunity beliefs has a lower parsimonious fit than the multidimensional model (Figure 4) in which they do not interact to predict the favorability of opportunity beliefs.

Fourth, we calculated the indirect and total effect of each type of human capital on the favorability of 3rd- and 1st-person opportunity beliefs. The results shown on Table B7 suggest that while both GHC and SHC have an indirect effect (mediated by new venture ideas) on the favorability of 3rd-person opportunity beliefs, only the total effect of SHC on the favorability of 3rd-person opportunity beliefs is significant. Regarding the favorability of 1st-person opportunity beliefs, both GHC and SHC have a significant indirect effect; but only the total

effect of SHC is significant while the total effect of GHC on the favorability of 1st-person opportunity beliefs is not significant.

TABLE B1. Coefficients for direct-effect model (see Figure B1a)

	Coefficient	SE	95% CI	*z* value	*p* value
EK → OB3	-0.01	0.02	-0.05 : 0.04	-0.36	0.718
WE → OB3	0.01	0.06	-0.10 : 0.12	0.11	0.915
EE → OB3	0.04	0.03	-0.03 : 0.10	1.11	0.267
IE → OB3	0.01	0.03	-0.05 : 0.07	0.35	0.723
NVI → OB3	0.29	0.06	0.17 : 0.42	4.75	0.000
Model fit: $\chi^2(4) = 39.37$; $p \leq 0.001$; CFI = 0.64; RMSEA = 0.00; SRMR = 0.05; N = 344,374					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

EK = Education-based Knowledge; WE = Work Experience; EE = Entrepreneurship Experience; IE = Industry Experience; NVI = Ability to generate new venture ideas; OB3 = Favorability of 3rd-person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE B2. Coefficients for direct-effect model (see Figure B1b)

	Coefficient	SE	95% CI	*z* value	*p* value
EK → OB1	0.00	0.02	-0.04 : 0.05	0.17	0.864
WE → OB1	0.04	0.03	-0.01 : 0.10	1.47	0.142
EE → OB1	0.05**	0.02	0.02 : 0.09	3.04	0.002
IE → OB1	0.05**	0.02	0.01 : 0.10	2.60	0.009
NVI → OB1	0.20***	0.04	0.12 : 0.28	4.82	0.000
Model fit: $\chi^2(4) = 40.75$; $p \leq 0.001$; CFI = 0.69; RMSEA = 0.02; SRMR = 0.05; N = 32,642					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

EK = Education-based Knowledge; WE = Work Experience; EE = Entrepreneurship Experience; IE = Industry Experience; NVI = Ability to generate new venture ideas; OB1 = Favorability of 1st-person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE B3. Coefficients for mediated-effect model (see Figure B2)

	Coefficient	SE	95% CI	*z* value	*p* value
EK → NVI	0.06*	0.03	0.01 : 0.12	2.25	0.024
WE → NVI	0.08**	0.03	0.02 : 0.13	2.63	0.009
EE → NVI	0.10***	0.02	0.05 : 0.15	4.22	0.000
IE → NVI	0.09***	0.02	0.04 : 0.14	3.51	0.000
NVI → OB1	0.26***	0.04	0.19 : 0.34	6.58	0.000
Model fit: $\chi^2(4) = 12.27$; $p \leq 0.05$; CFI = 0.93; RMSEA = 0.01; SRMR = 0.02; N = 32,642					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

EK = Education-based Knowledge; WE = Work Experience; EE = Entrepreneurship Experience; IE = Industry Experience; NVI = Ability to generate new venture ideas; OB1 = Favorability of 1st-person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE B4. Coefficients for full-effect model (see Figure B3)

	Coefficient	SE	95% CI	*z* value	*p* value
EK → NVI	0.05†	0.03	0.00 : 0.10	1.93	0.054
WE → NVI	0.07*	0.03	0.01 : 0.13	2.44	0.015
EE → NVI	0.10***	0.02	0.05 : 0.15	4.04	0.000
IE → NVI	0.08**	0.02	0.03 : 0.13	3.24	0.001
NVI → OB3	0.38***	0.05	0.29 : 0.48	7.93	0.000
OB3 → OB1	0.50***	0.03	0.45 : 0.56	17.73	0.000
Model fit: $\chi^2(9) = 21.17$; $p \leq 0.05$; CFI = 0.97; RMSEA = 0.00; SRMR = 0.03; N=358,131					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

EK = Education-based Knowledge; WE = Work Experience; EE = Entrepreneurship Experience; IE = Industry Experience; NVI = Ability to generate new venture ideas; OB3 = Favorability of 3rd-person Opportunity Beliefs; OB1 = Favorability of 1st-person Opportunity Beliefs; SE = Standard Error; CI = Confidence Interval; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE B5. Correlation between 3rd-person opportunity beliefs and the components of 1st-person opportunity beliefs

	Coefficient	SE	95% CI	*t* value	*p* value
OB3 → Personal feasibility	0.20	0.19	-0.19 : 0.60	1.05	0.303
OB3 → Personal gain estimation	0.40**	0.14	0.11 : 0.70	2.80	0.009
OB3 → Personal loss estimation	-0.26	0.17	-0.61 : 0.07	-1.61	0.117
OB3 → Overall evaluation	0.38***	0.11	0.16 : 0.59	3.58	0.001
R^2_{Meta} = 0.16; F-Test = 5.68**; Q-statistic = 1,370***					

OB3 = Favorability of 3rd-person Opportunity Beliefs; SE = Standard Error; CI = Confidence Interval; F-Test = Omnibus Test of Significance of Overall Model; Q-statistic = Chi-square Test of Effect Size Heterogeneity; R^2_{Meta} = Percentage of Total Heterogeneity Variance Explained by Model

TABLE B6. Coefficients for full-effect unidimensional model (see Figure H1)

	Coefficient	SE	95% CI		*z* value	*p* value
index → SHC	0.39***	0.05	0.28 : 0.49		7.10	0.000
index → GHC	0.75***	0.08	0.59	0.91	9.35	0.000
index → NVI	0.65***	0.07	0.51	0.78	9.33	0.000
index → OB3	0.11***	0.02	0.07	0.14	6.02	0.000
OB3 → OB1	0.08***	0.01	0.06	0.11	6.08	0.000
Model fit: $\chi^2(5) = 24.19$; $p \leq 0.001$; CFI = 0.95; RMSEA = 0.00; SRMR = 0.04; AIC = 14.19; N = 358,131						

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

SHC = Specific Human Capital; GHC = General Human Capital; NVI = Ability to generate new venture ideas; OB3 = Favorability of 3rd-person Opportunity Beliefs; OB1 = Favorability of 1st-person Opportunity Beliefs; SE = Standard Error; CI = Confidence Interval; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual; AIC = Akaike Information Criterion.

TABLE B7. Coefficients for indirect and total effects of human capital on opportunity beliefs

3rd-person Opportunity Beliefs			1st-person Opportunity Beliefs		
	Indirect Effect	Total Effect		Indirect Effect	Total Effect
GHC → OB3	0.07**	-0.01	GHC → OB1	0.06**	0.02
SHC → OB3	0.08***	0.05**	SHC → OB1	0.09***	0.06***

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$; GHC = General Human Capital; SHC = Specific Human Capital; OB3 = Favorability of 3rd-person Opportunity Beliefs; OB1 = Favorability of 1st-person Opportunity Beliefs

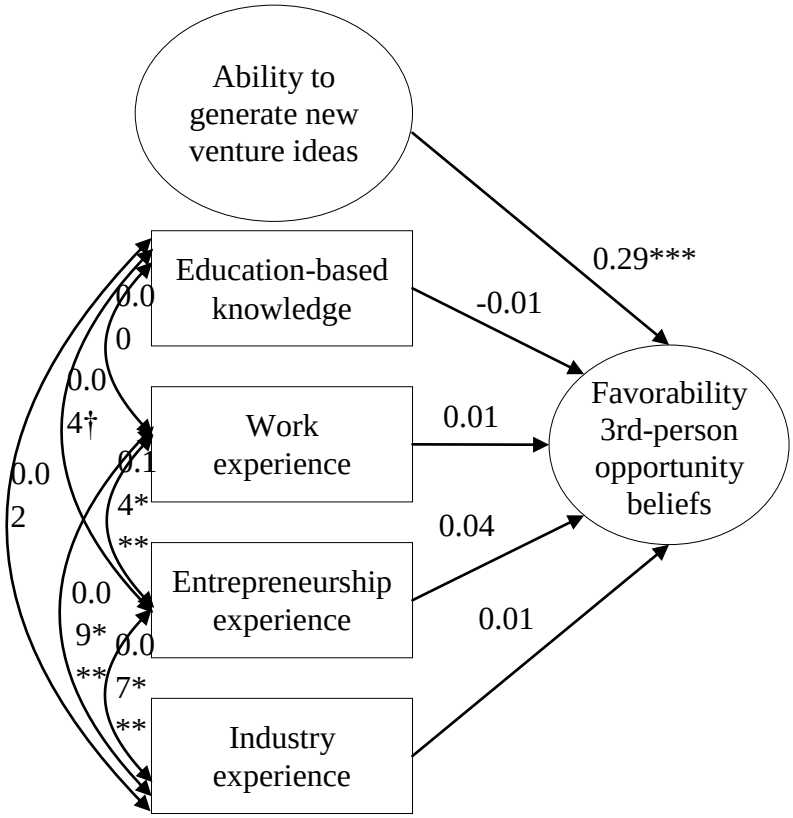

FIGURE B1a. Direct-effect model (HC → OB3). Endogenous error terms not included.
(*** $p \leq 0.001$, ** $p \leq 0.01$, * $p \leq 0.05$, † $p \leq 0.10$)

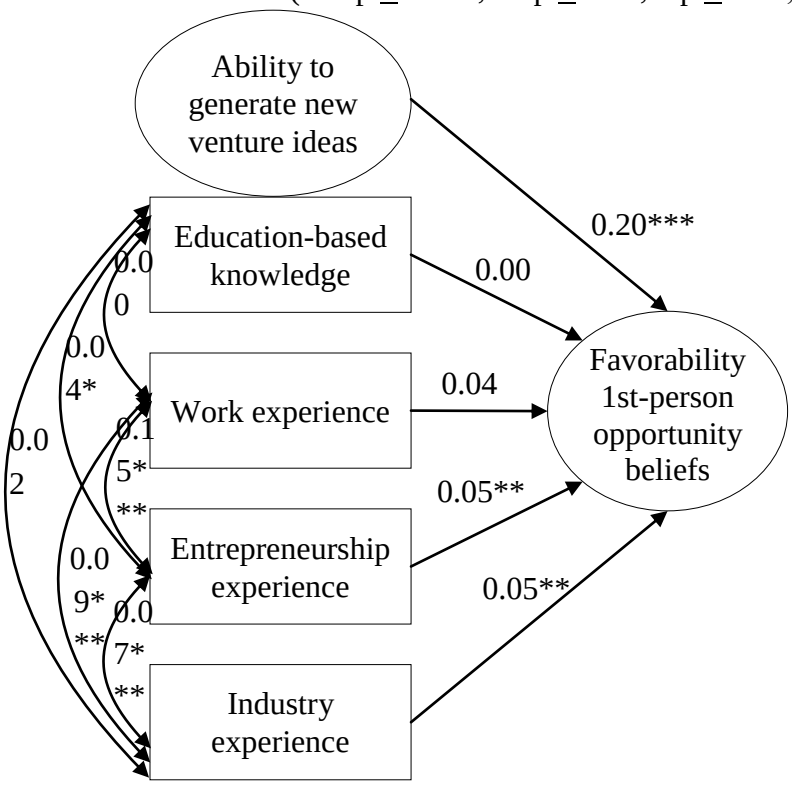

FIGURE B1b. Direct-effect model (HC → OB1). Endogenous error terms not included.
(*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, † $p < 0.10$)

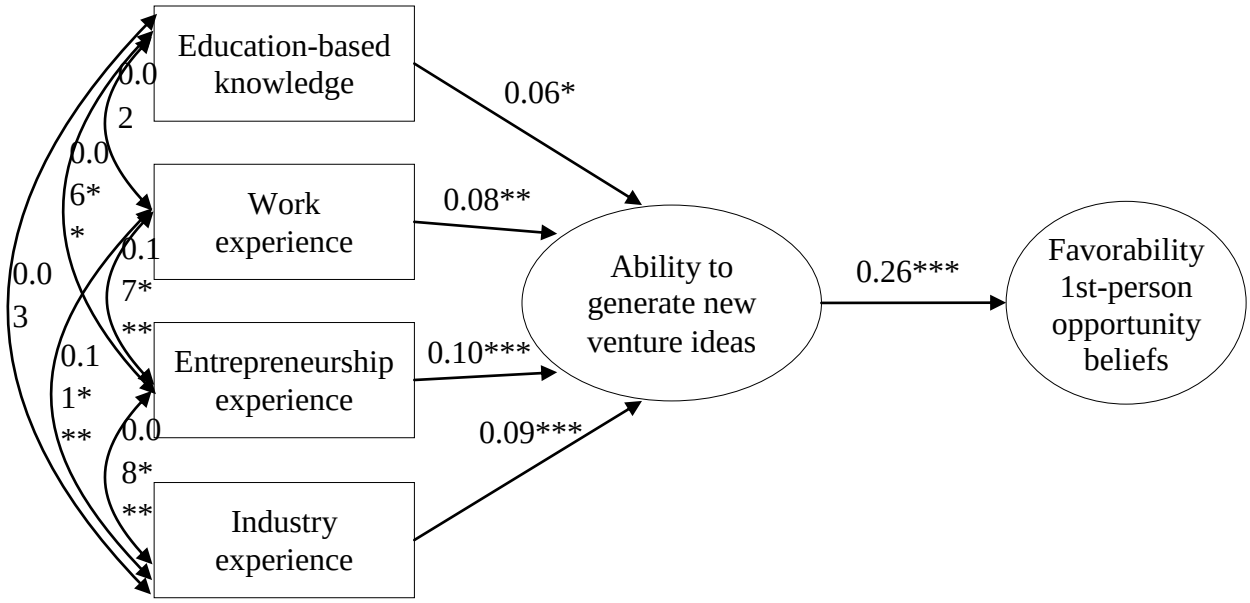

FIGURE B2. Mediated-effect model (HC → NVI → OB1). Endogenous error terms not included.
(*** p ≤ 0.001, ** p ≤ 0.01, * p ≤ 0.05, † p ≤ 0.10)

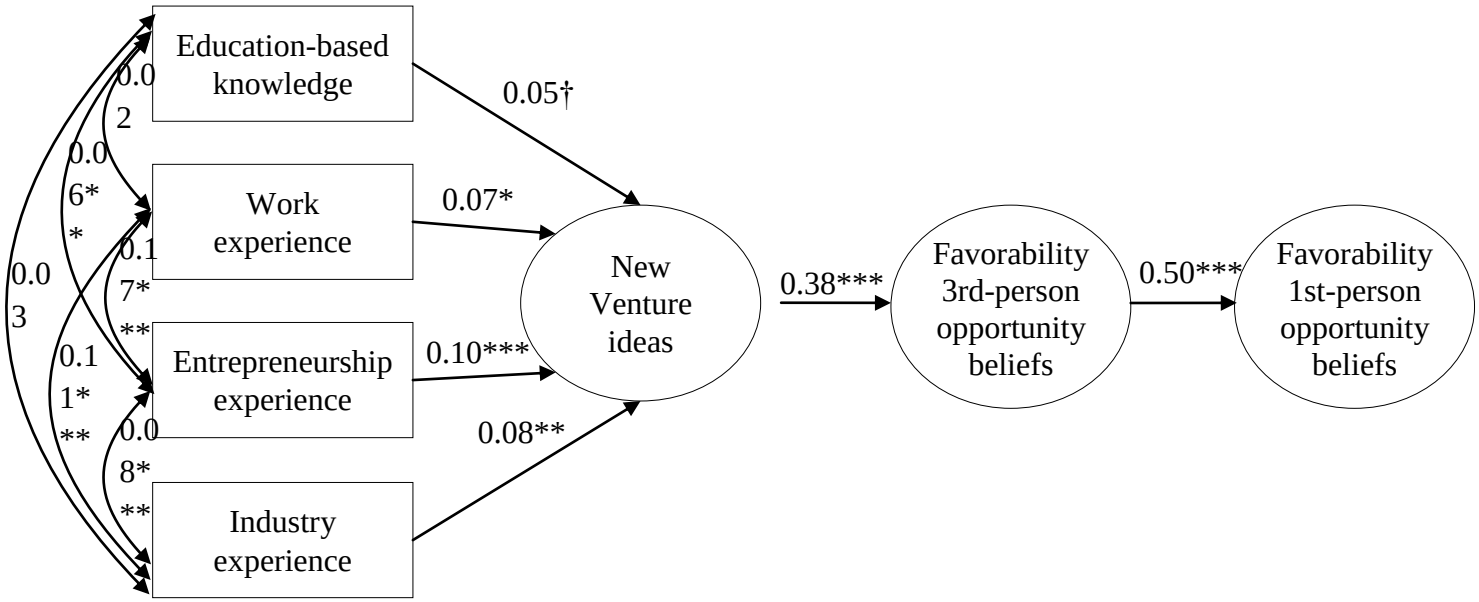

FIGURE B3. Full-effect model (HC → NVI → OB3 → OB1). Endogenous terms not included.
(*** p ≤ 0.001, ** p ≤ 0.01, * p ≤ 0.05, † p ≤ 0.10)

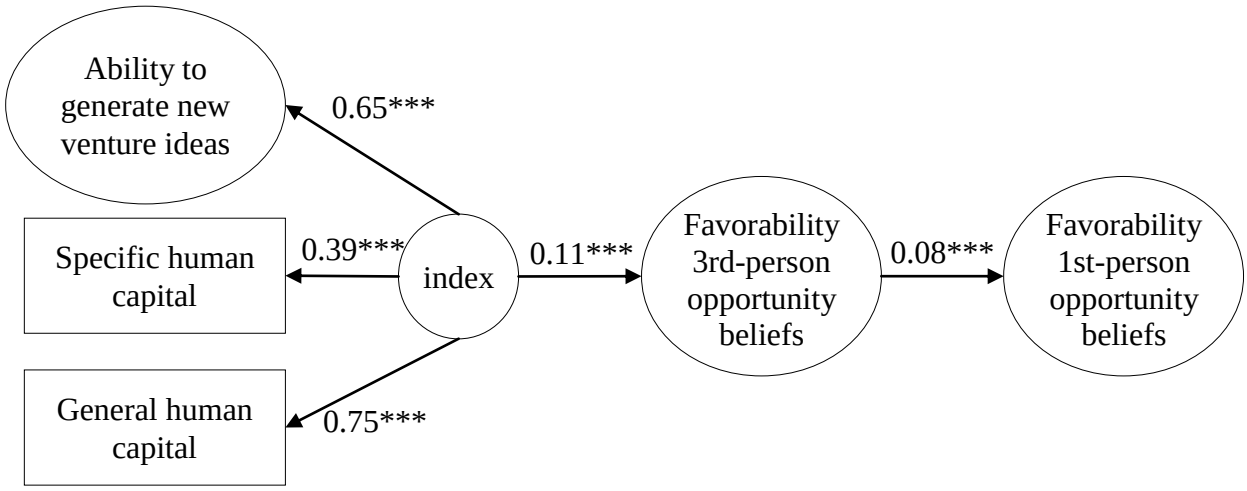

FIGURE B4. Unidimensional model of interaction between human capital and ability to generate new venture ideas (HC + NVI → OB3 → OB3). Endogenous error terms not included. (*** $p \leq 0.001$, ** $p \leq 0.01$, * $p \leq 0.05$, † $p \leq 0.10$)

APPENDIX C

Meta-Regression Analyses of Boundary Conditions

To assess the effect of different research design choices and an important boundary condition, we ran a series of meta-regression models with each of the relationships in our conceptual model as the dependent variable and several moderating variables as independent variables. In contrast with the MASEM analyses, all operationalizations of the ability to generate new venture ideas (including measures of both the number and quality of new venture ideas) were included in the meta-regression analyses. Five independent variables were included in each model. In terms of research design-related moderators we consider the following. *Publication bias* is a dichotomous variable equal to 0 for published articles and 1 for unpublished articles. *Experimental* is a dichotomous variable equal to 1 for studies where subjects were generating new venture ideas as part of an experiment and 0 otherwise. *Entrepreneur sample* is a dichotomous variable equal to 1 if the study is based on a sample of entrepreneurs and 0 otherwise. New venture idea *quality* was a dichotomous variable equal to 1 if the new venture idea construct was measured using expert raters' assessment of the quality of the ideas generated by the respondent and 0 otherwise.

As a boundary condition we selected *developed country*, which is a dichotomous variable equal to 1 for samples composed primarily of respondents from OECD countries and 0 otherwise (Unger et al., 2011; De Clercq, Lim, & Oh, 2013; Buckley, Clegg, Cross, Voss, & Zheng, 2007; Gubbi, Aulakh, Ray, Sarka, & Chittor, 2010; Lim, Oh, & De Clercq, 2016). The inclusion of this condition can be theorized as follows. Individuals in developing countries have generally low GHC and SHC and face few employment options (Alvarez & Barney, 2014). We expect that these individuals initiate entrepreneurial action through a replication entrepreneurial process (Dencker, Bacq, Gruber, & Haas, 2020) by pursuing a copy of an existing business idea (which

only requires low human capital levels) that they are already familiar with, and that readily generates revenue (Bradley, McMullen, Atmadja, Simiyu, & Artz, 2011). However, some individuals in developing countries possess high GHC and/or SHC (Poschke, 2013). We contend that these individuals will engage in a skill-preserving entrepreneurial process that will prime them to generate new venture ideas and develop opportunities related to their high human capital endowments (Dencker et al., 2020).

Developed countries offer a more munificent setting in which to consider and engage entrepreneurial activity. We argue that low skilled individuals will engage in an imitation entrepreneurial process in which they deploy the low GHC they acquired during required schooling, by generating imitative ideas and opportunities pursued by similarly low-skilled entrepreneurs (Dencker et al., 2020). Individuals with high levels of human capital in such a context will try to capitalize on their skills by embarking on a path dependent entrepreneurial process (Dencker et al., 2020). We anticipate that they will want to use their SHC (Mincer & Ofek, 1982) by applying it in a similar context in which it was acquired.

The results of meta-regression analyses of contextual and methodological moderators reported in Table C1 below reveal the following. First, we observe from Table C1 that, overall, the publication status of the sample of studies used in this meta-analysis has no significant influence on the results of most relationships studied. Second, our results suggest that experiments report weaker correlations, especially in the elaboration stage of the model. Experiments also appear to diminish the impact of entrepreneurial experience on the favorability of 1st-person opportunity beliefs, relative to studies based on surveys. Third, the findings suggest that studies that use samples of entrepreneurs underestimate the correlations between the ability

to generate new venture ideas and the favorability of 1st-person opportunity beliefs, relative to studies using samples of non-entrepreneurs.

Fourth, an important boundary condition of our results is whether the EOI process is set in a developed country or not. The results suggest that the correlation between education-based knowledge, industry and work experience and the ability to generate new venture ideas is weaker in developed countries than in developing countries. In developed countries individuals with high levels of GHC and SHC generate fewer new venture ideas that are closely related to their specialized expertise and engage in path dependent entrepreneurial opportunity identification (Dencker et al., 2020). They can do this because in a developed country environment there is likely demand for their specialized expertise. In contrast, individuals with high levels of GHC and SHC will engage in skill preserving opportunity identification (Dencker et al., 2020) that will spur them to generate a greater number of new venture ideas in a wide variety of application areas because in developing country environments, demand for their narrow, specialized expertise is likely much lower.

And fifth, although only measures of the *ability to generate* new venture ideas (quantity) are used in all analyses up to this point, Models 9-14 in Table C1 include both the *number* and *quality* of new venture ideas (assessed by expert raters; *not* by respondents) allowing us to test for the moderating effect of new venture idea quality ("NVI quality measure"). When using expert raters' assessment of the *quality* rather than the *number* of new venture ideas generated by respondents, the correlations with entrepreneurship and industry experience are smaller. Finally, when respondents generate new venture ideas that expert raters judge to be of higher *quality*, new venture ideas have a stronger correlation with favorability of 3rd-person opportunity beliefs.

Nonlinearities in the Model

The results of grouping studies according to low, medium, and high values of the average number of new venture ideas generated by respondents in each sample (Jin et al., 2017) suggests that the correlation between the ability to generate new venture ideas and the favorability of 1st-person opportunity beliefs strengthens initially as the number of new venture ideas increases, but weakens after a certain number of new venture ideas. The results shown in Table C2 suggest that the relationship is stronger for studies with a medium number of new venture ideas ($r = 0.23$) relative to studies with a low number of new venture ideas ($r = 0.15$), but is weaker for studies with a high number of new venture ideas ($r = 0.13$) relative to studies with a medium number of new venture ideas and this difference is significant ($z = 2.32$; $p < 0.05$). This suggests that the moderating effect of new venture ideas on the relationship between new venture ideas and favorability of 1st-person opportunity beliefs is nonlinear in the form of an inverse u-shape. This may be related to boundedly rational individuals' limited cognitive capacity to complete the matching of mental images associated with new venture ideas with those of the individual's ideal opportunity, and estimating personal gains, losses and establishing personal feasibility and desirability at very high levels of new venture ideas. Regarding the relationship between the ability to generate new venture ideas and the favorability of 3rd-person opportunity beliefs, our results suggest that the relationship increases monotonically as the number of new venture ideas increases from low ($r = 0.03$) to medium levels ($r = 0.20$) and the difference is significant ($z = -1.68$; $p < 0.10$), and further strengthens as the number of new venture ideas increases from medium to high ($r = 0.58$) levels, and the difference between studies in the medium versus high range of the distribution is significant ($z = -4.76$; $p < 0.001$). Thus, our results indicate that the moderating effect of the number of new venture ideas on the new venture ideas—favorability of 3rd-person opportunity beliefs is linear. Boundedly rational individuals will have an easier time,

completing the matching of mental images since they will not have to complete estimations of personal gain, losses, feasibility and desirability at high levels of new venture ideas.

TABLE C1. Results of meta-regression analyses of boundary conditions

	Model 1 EK-OB3	Model 2 IE-OB3	Model 3 WE-OB3	Model 4 EE-OB3	Model 5 EK-OB1	Model 6 IE-OB1	Model 7 WE-OB1	Model 8 EE-OB1	Model 9 EK-NVI	Model 10 IE-NVI	Model 11 WE-NVI	Model 12 EE-NVI	Model 13 NVI-OB3	Model 14 NVI-OB1	Model 15 OB3-OB1
Publication bias	-0.01	0.01	0.09†	-0.07	-0.03	-0.01	n/a	0.00	0.04	-0.01	0.01	0.04†	-0.01	0.01	-0.05
Experiment	-0.03	0.01	-0.07	-0.03	-0.04†	0.02	-0.02	-0.03*	0.03	0.04	0.03	-0.01	-0.28**	-0.12†	0.12***
Entrepreneur sample	-0.03†	-0.03	-0.05	-0.05	-0.01	-0.02	-0.01	-0.04**	-0.01	-0.04	0.06**	0.01	0.02	-0.13*	-0.04
Developed country	0.02	-0.06*	n/a	0.02	0.01	-0.03	0.00	-0.01	-0.08**	-0.09***	-0.06**	0.02	n/a	n/a	n/a
NVI quality measure	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.00	-0.05*	-0.03	-0.03†	0.09†	n/a	n/a
K	45	46	9	27	51	60	27	89	38	57	47	66	9	13	37
Q-statistic	1,063***	124***	13	104***	286***	360***	121***	253***	177***	367***	188***	263***	106***	127***	432***
I^2_2	0.98	0.34	0.31	0.15	0.23	0.17	0.61	0.27	0.80	0.28	0.40	0.54	0.00	0.75	0.75
I^2_3	0.00	0.31	0.00	0.60	0.57	0.70	0.17	0.49	0.03	0.60	0.36	0.22	0.93	0.14	0.14
R^2_2	0.26	0.00	0.90	0.14	0.04	0.00	0.00	0.00	0.00	0.24	0.01	0.00	0.00	0.54	0.31
R^2_3	0.48	1.00	0.55	0.31	0.27	0.10	0.22	0.58	0.27	0.51	1.00	0.93	0.99	1.00	1.00
R^2_{Meta}	0.26	0.47	0.90	0.27	0.20	0.08	0.04	0.35	0.25	0.42	0.48	0.24	0.99	0.62	0.42
Model sig. F-test	3.09*	3.01*	2.04	1.13	1.62	0.41	0.26	3.37*	1.54	4.66**	4.50**	2.71*	20.60***	5.34*	6.73***

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

EK = Education-based Knowledge; WE = Work Experience; EE = Entrepreneurship Experience; IE = Industry Experience; NVI = Ability to generate new venture ideas; OB3 = Favorability 3rd-person Opportunity Beliefs; OB1 = Favorability1st-person Opportunity Beliefs; I^2_2 = Percentage of heterogeneity variance due to level-2 unobserved differences between effect sizes within the same sample; I^2_3 = Percentage of heterogeneity variance due to level-3 unobserved differences between samples; R^2_2 = Percentage of level-2 heterogeneity variance explained by model; R^2_3 = Percentage of level-3 heterogeneity variance explained by model; R^2_{Meta} = Percentage of total heterogeneity variance explained by model; Level 2 = Differences between effect sizes within the same sample; Level 3 = Between sample effect size differences; Q-statistic = Chi-square test of effect size heterogeneity; Model Significance F-Test = Omnibus test of statistical significance of overall model; K = Number of Effect Sizes

TABLE C2. Mean weighted effect size values for studies with low, medium, and high numbers of new venture ideas.

New Venture Ideas and 3rd-person Opportunity Beliefs					New Venture Ideas and 1st-person Opportunity Beliefs				
	ρ	N	K	z-value		ρ	N	K	z-value
Low NVI	0.03	283	2	-1.68†	Low NVI	0.15	496	2	-1.53
Medium NVI	0.20	147	4	-4.76***	Medium NVI	0.23	1,112	4	2.32*
High NVI	0.58	421	3		High NVI	0.13	918	3	

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$; NVI = New Venture Ideas; ρ = Mean Weighted Effect Size; N = Number of Observations; K = Number of Effect Sizes; z-value = Z Test of Statistical Significance in Differences Between Mean Weighted Effect Sizes

APPENDIX D

Sensitivity Analyses of Measurement Error Correction

TABLE D1. Coefficients for direct-effect model—observed correlations (see Figure 2a)

	Coefficient	SE	95% CI	*z* value	*p* value
SHC → OB3	0.04	0.03	-0.01 : 0.09	1.45	0.146
GHC → OB3	0.00	0.02	-0.05 : 0.04	-0.13	0.893
NVI → OB3	0.31***	0.07	0.18 : 0.44	4.69	0.000
Model fit: $\chi^2(2) = 33.37$; $p \leq 0.001$; CFI = 0.57; RMSEA = 0.01; SRMR = 0.06; N = 343,425					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

SHC = Specific Human Capital; GHC = General Human Capital; NVI = Ability to generate new venture ideas; OB3 = Favorability 3rd-Person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE D2. Coefficients for direct-effect model—observed correlations (see Figure 2b)

	Coefficient	SE	95% CI	*z* value	*p* value
SHC → OB1	0.06***	0.01	0.03 : 0.09	4.05	0.000
GHC → OB1	0.02	0.02	-0.02 : 0.05	1.10	0.270
NVI → OB1	0.20***	0.04	0.12 : 0.29	4.75	0.000
Model fit: $\chi^2(2) = 39.00$; $p \leq 0.001$; CFI = 0.59; RMSEA = 0.02; SRMR = 0.06; N = 32,020					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

SHC = Specific Human Capital; GHC = General Human Capital; NVI = Ability to generate new venture ideas; OB1 = Favorability 1st-Person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE D3. Coefficients for mediated-effect model—observed correlations (see Figure 3)

	Coefficient	SE	95% CI	*z* value	*p* value
SHC → NVI	0.11***	0.02	0.07 : 0.14	6.09	0.000
GHC → NVI	0.08***	0.02	0.04 : 0.12	3.68	0.000
NVI → OB1	0.26***	0.04	0.18 : 0.34	6.34	0.000
Model fit: $\chi^2(2) = 8.31$; $p \leq 0.05$; CFI = 0.93; RMSEA = 0.00; SRMR = 0.02; N = 32,020					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

SHC = Specific Human Capital; GHC = General Human Capital; NVI = Ability to generate new venture ideas; OB1 = Favorability 1st-Person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE D4. Coefficients for full-effect model—observed correlations (see Figure 4)

	Coefficient	SE	95% CI	*z* value	*p* value
SHC → NVI	0.11***	0.02	0.07 : 0.14	6.00	0.000
GHC → NVI	0.07***	0.02	0.03 : 0.11	3.35	0.001
NVI → OB3	0.39***	0.05	0.29 : 0.48	7.99	0.000
OB3 → OB1	0.51***	0.03	0.46 : 0.57	17.84	0.000

Model fit: $\chi^2(5) = 15.59$; $p \leq 0.01$; CFI = 0.97; RMSEA = 0.00; SRMR = 0.03; N = 358,124

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

SHC = Specific Human Capital; GHC = General Human Capital; NVI = Ability to generate new venture ideas; OB3 = Favorability 3rd-Person Opportunity Beliefs; OB1 = Favorability1st-Person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE D5. Coefficients for direct-effect model—observed correlations (see Figure B1a)

	Coefficient	SE	95% CI	*z* value	*p* value
EK → OB3	-0.01	0.02	-0.05 : 0.04	-0.38	0.708
WE → OB3	0.01	0.06	-0.11 : 0.12	0.12	0.908
EE → OB3	0.04	0.03	-0.03 : 0.11	1.23	0.219
IE → OB3	0.01	0.03	-0.06 : 0.07	0.26	0.793
NVI → OB3	0.31***	0.06	0.18 : 0.43	4.86	0.000

Model fit: $\chi^2(4) = 42.97$; $p \leq 0.001$; CFI = 0.65; RMSEA = 0.01; SRMR = 0.06; N = 344,374

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

EK = Education-based Knowledge; WE = Work Experience; EE = Entrepreneurship Experience; IE = Industry Experience; NVI = Ability to generate new venture ideas; OB3 = Favorability 3rd-person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE D6. Coefficients for direct-effect model—observed correlations (see Figure B1b)

	Coefficient	SE	95% CI	*z* value	*p* value
EK → OB1	0.00	0.02	-0.04 : 0.04	0.06	0.954
WE → OB1	0.04	0.03	-0.02 : 0.10	1.37	0.171
EE → OB1	0.05**	0.02	0.02 : 0.08	2.87	0.004
IE → OB1	0.05*	0.02	0.01 : 0.09	2.22	0.026
NVI → OB1	0.21***	0.04	0.13 : 0.30	5.20	0.000

Model fit: $\chi^2(4) = 48.70$; $p \leq 0.001$; CFI = 0.65; RMSEA = 0.02; SRMR = 0.05; N = 32,642

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

EK = Education-based Knowledge; WE = Work Experience; EE = Entrepreneurship Experience; IE = Industry Experience; NVI = Ability to generate new venture ideas; OB1 = Favorability 1st-person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE D7. Coefficients for mediated-effect model—observed correlations (see Figure B2)

	Coefficient	SE	95% CI	*z* value	*p* value
EK → NVI	0.06*	0.03	0.01 : 0.12	2.35	0.019
WE → NVI	0.08**	0.03	0.02 : 0.14	2.82	0.005
EE → NVI	0.11***	0.02	0.06 : 0.15	4.49	0.000
IE → NVI	0.09***	0.02	0.04 : 0.14	3.71	0.000
NVI → OB1	0.27***	0.04	0.19 : 0.35	6.91	0.000

Model fit: $\chi^2(4) = 8.23$; $p \leq 0.10$; CFI = 0.97; RMSEA = 0.01; SRMR = 0.02; N = 32,642

*** p ≤ 0.001; ** p ≤ 0.01; * p ≤ 0.05; † p ≤ 0.10
EK = Education-based Knowledge; WE = Work Experience; EE = Entrepreneurship Experience; IE = Industry Experience; NVI = Ability to generate new venture ideas; OB1 = Favorability1st-person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE D8. Coefficients for full-effect model—observed correlations (see Figure B3)

	Coefficient	SE	95% CI	*z* value	*p* value
EK → NVI	0.05†	0.03	0.00 : 0.10	1.96	0.050
WE → NVI	0.08**	0.03	0.02 : 0.14	2.61	0.009
EE → NVI	0.10***	0.02	0.06 : 0.15	4.33	0.000
IE → NVI	0.08***	0.02	0.04 : 0.13	3.43	0.001
NVI → OB3	0.40***	0.05	0.30 : 0.49	8.31	0.000
OB3 → OB1	0.51***	0.03	0.46 : 0.57	18.31	0.000
Model fit: $\chi^2(9) = 16.56$; p ≤ 0.10; CFI = 0.98; RMSEA = 0.00; SRMR = 0.03; N = 358,131					

*** p ≤ 0.001; ** p ≤ 0.01; * p ≤ 0.05; † p ≤ 0.10
EK = Education-based Knowledge; WE = Work Experience; EE = Entrepreneurship Experience; IE = Industry Experience; NVI = Ability to generate new venture ideas; OB3 = Favorability 3rd-person Opportunity Beliefs; OB1 = Favorability 1st-person Opportunity Beliefs; SE = Standard Error; CI = Confidence Interval; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE D9. Coefficients for direct-effect model—standard reliability correction (see Figure 2a)

	Coefficient	SE	95% CI	*z* value	*p* value
SHC → OB3	0.04	0.03	-0.02 : 0.10	1.38	0.168
GHC → OB3	0.00	0.03	-0.06 : 0.05	-0.18	0.855
NVI → OB3	0.35***	0.08	0.20 : 0.50	4.57	0.000
Model fit: $\chi^2(2) = 30.08$; p ≤ 0.001; CFI = 0.61; RMSEA = 0.01; SRMR = 0.06; N = 343,425					

*** p ≤ 0.001; ** p ≤ 0.01; * p ≤ 0.05; † p ≤ 0.10
SHC = Specific Human Capital; GHC = General Human Capital; NVI = Ability to generate new venture ideas; OB3 = Favorability 3rd-Person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE D10. Coefficients for direct-effect model—standard reliability correction (see Figure 2b)

	Coefficient	SE	95% CI	*z* value	*p* value
SHC → OB1	0.07***	0.02	0.04 : 0.11	4.22	0.000
GHC → OB1	0.02	0.02	-0.02 : 0.07	1.06	0.287
NVI → OB1	0.23***	0.05	0.13 : 0.33	4.37	0.000
Model fit: $\chi^2(2) = 33.30$; p ≤ 0.001; CFI = 0.63; RMSEA = 0.02; SRMR = 0.06; N = 32,020					

*** p ≤ 0.001; ** p ≤ 0.01; * p ≤ 0.05; † p ≤ 0.10
SHC = Specific Human Capital; GHC = General Human Capital; NVI = Ability to generate new venture ideas; OB1 = Favorability 1st-Person Opportunity Beliefs; SE = Standard Error; 95% CI

= Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE D11. Coefficients for mediated-effect model—standard reliability correction (see Figure 3)

	Coefficient	SE	95% CI	*z* value	*p* value
SHC → NVI	0.12***	0.02	0.08 : 0.17	5.83	0.000
GHC → NVI	0.08***	0.02	0.03 : 0.13	3.35	0.001
NVI → OB1	0.30***	0.05	0.21 : 0.40	6.14	0.000
Model fit: $\chi^2(2) = 8.28$; $p \leq 0.05$; CFI = 0.93; RMSEA = 0.00; SRMR = 0.03; N = 32,020					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

SHC = Specific Human Capital; GHC = General Human Capital; NVI = Ability to generate new venture ideas; OB1 = Favorability 1st-Person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE D12. Coefficients for full-effect model—standard reliability correction (see Figure 4)

	Coefficient	SE	95% CI	*z* value	*p* value
SHC → NVI	0.12***	0.02	0.08 : 0.16	5.87	0.000
GHC → NVI	0.07**	0.02	0.03 : 0.12	3.07	0.002
NVI → OB3	0.43***	0.05	0.32 : 0.53	7.86	0.000
OB3 → OB1	0.58***	0.03	0.51 : 0.64	17.14	0.000
Model fit: $\chi^2(5) = 14.54$; $p \leq 0.01$; CFI = 0.97; RMSEA = 0.00; SRMR = 0.03; N = 358,124					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

SHC = Specific Human Capital; GHC = General Human Capital; NVI = Ability to generate new venture ideas; OB3 = Favorability 3rd-Person Opportunity Beliefs; OB1 = Favorability 1st-Person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE D13. Coefficients for direct-effect model—standard reliability correction (see Figure B1a)

	Coefficient	SE	95% CI	*z* value	*p* value
EK → OB3	-0.01	0.03	-0.07 : 0.04	-0.44	0.663
WE → OB3	0.01	0.07	-0.13 : 0.14	0.09	0.931
EE → OB3	0.05	0.04	-0.04 : 0.13	1.11	0.269
IE → OB3	0.01	0.04	-0.07 : 0.08	0.19	0.853
NVI → OB3	0.35***	0.07	0.20 : 0.50	4.71	0.000
Model fit: $\chi^2(4) = 38.83$; $p \leq 0.001$; CFI = 0.65; RMSEA = 0.00; SRMR = 0.06; N = 344,374					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

EK = Formal Knowledge; WE = Work Experience; EE = Entrepreneurship Experience; IE = Industry Experience; NVI = Ability to generate new venture ideas; OB3 = Favorability 3rd-person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE D14. Coefficients for direct-effect model—standard reliability correction (see Figure B1b)

	Coefficient	SE	95% CI	*z* value	*p* value
EK → OB1	0.00	0.03	-0.05 : 0.05	0.04	0.969
WE → OB1	0.05	0.04	-0.02 : 0.12	1.28	0.202
EE → OB1	0.06**	0.02	0.02 : 0.10	2.79	0.005
IE → OB1	0.06*	0.03	0.01 : 0.11	2.26	0.024
NVI → OB1	0.24***	0.05	0.14 : 0.34	4.78	0.000
Model fit: $\chi^2(4) = 41.85$; $p \leq 0.001$; CFI = 0.70; RMSEA = 0.02; SRMR = 0.06; N = 32,642					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

EK = Education-based Knowledge; WE = Work Experience; EE = Entrepreneurship Experience; IE = Industry Experience; NVI = Ability to generate new venture ideas; OB1 = Favorability 1st-person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE D15. Coefficients for mediated-effect model—standard reliability correction (see Figure B2)

	Coefficient	SE	95% CI	*z* value	*p* value
EK → NVI	0.07*	0.03	0.00 : 0.13	2.07	0.038
WE → NVI	0.09*	0.04	0.02 : 0.16	2.44	0.015
EE → NVI	0.12***	0.03	0.06 : 0.17	4.06	0.000
IE → NVI	0.10***	0.03	0.04 : 0.16	3.42	0.001
NVI → OB1	0.31***	0.05	0.22 : 0.41	6.67	0.000
Model fit: $\chi^2(4) = 8.00$; $p \leq 0.10$; CFI = 0.97; RMSEA = 0.01; SRMR = 0.02; N = 32,642					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

EK = Education-based Knowledge; WE = Work Experience; EE = Entrepreneurship Experience; IE = Industry Experience; NVI = Ability to generate new venture ideas; OB1 = Favorability 1st-person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE D16. Coefficients for full-effect model—standard reliability correction (see Figure B2)

	Coefficient	SE	95% CI	*z* value	*p* value
EK → NVI	0.05†	0.03	-0.01 : 0.11	1.69	0.091
WE → NVI	0.08*	0.04	0.01 : 0.15	2.31	0.021
EE → NVI	0.12***	0.03	0.06 : 0.17	4.03	0.000
IE → NVI	0.09**	0.03	0.04 : 0.15	3.18	0.001
NVI → OB3	0.43***	0.05	0.33 : 0.54	8.15	0.000
OB3 → OB1	0.58***	0.03	0.51 : 0.64	17.54	0.000
Model fit: $\chi^2(9) = 15.11$; $p \leq 0.10$; CFI = 0.99; RMSEA = 0.00; SRMR = 0.03; N = 358,131					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

EK = Education-based Knowledge; WE = Work Experience; EE = Entrepreneurship Experience; IE = Industry Experience; NVI = Ability to generate new venture ideas; OB3 = Favorability 3rd-person Opportunity Beliefs; OB1 = Favorability 1st-person Opportunity Beliefs; SE = Standard

Error; CI = Confidence Interval; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

APPENDIX E

Sequence of Measurement of 3rd-person and 1st-person Opportunity Beliefs

TABLE E1. Sequence of measurement of favorability of 3rd-person and 1st-person opportunity beliefs

Author(s)	Spl Size	OB3 Variable(s)	OB1 Variable(s)	Sequence
Barbosa, Fayolle, & Smith (2020)	95	**OB3** ([1]Initial confidence about the new venture idea[t_1])	**OB1** ([1]Initial perceived risk in joining friend's venture[t_1], [2]Initial decision to join hypothetical venture in case study[t_1])	*OB3 measured prior to OB1 / using same questionnaire; only correlations between OB3[t_1]&OB1[t_1] and OB3[t_2]&OB1[t_2] were included*
		OB3 ([2]Final confidence about the new venture idea[t_2])	**OB1** ([3]Final perceived risk in joining friend's venture[t_2], [4]Final decision to join hypothetical venture in case study[t_2])	
Grégoire, Shepherd, & Lambert (2010)	6	**OB3**([1]Degree of alignment between means of supply and target market, [2]General feasibility of idea, [3]General desirability of idea)	**OB1**(Would invest time and resources to further explore the idea)	*OB3 measured before OB1 / using same questionnaire*
Grégoire, Shepherd, & Lambert (2010)	24	**OB3**([1]Degree of alignment between means of supply and target market, [2]General feasibility of idea, [3]General desirability of idea)	**OB1**(Would invest time and resources to further explore the idea)	*OB3 measured before OB1 / using same questionnaire*
Grichnik, Smeja, & Welpe (2010)	99	**OB3**(How positive and how promising respondents judged the product innovation in the case study to be and to what extent this situation is judged as an opportunity/chance)	**OB1**(Percentage of own savings, a potential loan, and leisure time respondents would be willing to invest/give up in order to exploit the new product innovation)	*OB3 measured before OB1 / using same questionnaire*
Grichnik, Smeja, & Welpe (2010)	84	**OB3**(How positive and how promising respondents judged the product innovation in the case study to be and to what extent this situation is judged as an opportunity/chance)	**OB1**(Percentage of own savings, a potential loan, and leisure time respondents would be willing to invest/give up in order to exploit the new product innovation described in the case study)	*OB3 measured before OB1 / using same questionnaire*
McCann (2017)	422	**OB3**(Likelihood that respondent's nascent venture will be operating in the future, regardless of who owns and operates the firm)	**OB1**([1]Expected year 1 sales, [2]Expected year 5 sales)	*OB1 questions appear before OB3 questions in the same questionnaire*
Michl, Spörrle, Welpe, Grichnik, & Picot (2012)	344	**OB3**(How positive and promising respondents judged the situation to be, and to what extent this scenario would be a realistic alternative to wage employment [from Grichnik et al. 2010])	**OB1**([1]Likelihood of success if respondents pursued their new venture idea, [2]Profit potential if respondents pursued their new venture idea, [3]Respondents' reported likelihood of pursuing their new venture idea in the future)	*OB3 measured before OB1 / using same questionnaire*
Robinson & Hayes (2012)	146	**OB3**(Likelihood of success of opportunity described in experiment)	**OB1**(Respondents would consider joining venture team if they had money to invest)	*OB3 measured before OB1 / using same questionnaire*

Author(s)	Spl Size	OB3 Variable(s)	OB1 Variable(s)	Sequence
Robinson (2010)	612	**OB3** (Risk perception measure from Keh et al. 2002)	**OB1**(Respondent would forgo other options and quit job to start the new venture proposed in experiment)	*OB1 measured after OB3 using the same questionnaire*
Scheaf (2018)	172	**OB3**(Beliefs about the opportunity's general feasibility and alignment between means of supply and market needs [from Grégoire et al. 2010])	**OB1**([1]Estimated personal gains from pursuing the opportunity, [2]Estimated personal losses from pursuing the opportunity, [3]Perceived personal feasibility of pursuing the opportunity)	*OB3 measured one week before OB1 / using different questionnaire*
Scheaf, Loignon, Webb, Heggestad, & Wood (2020)	145	**OB3**([1]Beliefs about the opportunity's general feasibility and fit/alignment between proposed solution and market needs [from Grégoire et al. 2010], [2]Respondent considers the new venture idea as an opportunity, worth considering, and generally feasible [from Keh et al. 2002], [3] Risk perception measure from Keh et al. 2002)	**OB1**([1]Estimated personal gains from pursuing the opportunity, [2]Estimated personal losses from pursuing the opportunity [reverse coded], [3]Perceived personal feasibility of pursuing the opportunity)	*OB3 measured one week before OB1 / using different questionnaire*
Ye (2012)	39	**OB3**(Expected value of the opportunity proposed in the case study)	**OB1**(Likelihood respondent will pursue the opportunity in case scenario)	*OB1 questions appear before OB3 questions in the same questionnaire*
Ye (2012)	89	**OB3**(Expected value of the opportunity proposed in the case study)	**OB1**(Likelihood respondent will pursue the opportunity in case scenario)	*OB1 questions appear before OB3 questions in the same questionnaire*
Zhai (2007)	285	**OB3**(Risk perception measure [from Keh et al. 2002])	**OB1**(Respondent considers business idea presented in case as: (a) an opportunity, (b) worth considering, (c) personally feasible, and (d) personally desirable given the situation [adapted from Keh et al. 2002])	*OB3 measured before OB1 / using same questionnaire*

TABLE E2. Coefficients for direct-effect model—excluding Ye (2012) and McCann (2017) (see Figure 2a)

	Coefficient	SE	95% CI	*z* value	*p* value
SHC → OB3	0.04	0.03	-0.01 : 0.09	1.45	0.148
GHC → OB3	0.00	0.02	-0.04 : 0.04	-0.07	0.946
NVI → OB3	0.30***	0.06	0.17 : 0.42	4.61	0.000
Model fit: $\chi^2(2) = 30.42$; $p \leq 0.001$; CFI = 0.60; RMSEA = 0.01; SRMR = 0.05; N = 342,875					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

SHC = Specific Human Capital; GHC = General Human Capital; NVI = Ability to generate new venture ideas; OB3 = Favorability 3rd-Person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE E3. Coefficients for direct-effect model—excluding Ye (2012) and McCann (2017) (see Figure 2b)

	Coefficient	SE	95% CI	*z* value	*p* value
SHC → OB1	0.06***	0.01	0.03 : 0.09	4.30	0.000
GHC → OB1	0.02	0.02	-0.01 : 0.06	1.11	0.268
NVI → OB1	0.19***	0.04	0.10 : 0.27	4.35	0.000
Model fit: $\chi^2(2) = 31.84$; $p \leq 0.001$; CFI = 0.63; RMSEA = 0.02; SRMR = 0.05; N = 31,470					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

SHC = Specific Human Capital; GHC = General Human Capital; NVI = Ability to generate new venture ideas; OB1 = Favorability 1st-Person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE E4. Coefficients for mediated-effect model—excluding Ye (2012) and McCann (2017) (see Figure 3)

	Coefficient	SE	95% CI	*z* value	*p* value
SHC → NVI	0.10***	0.02	0.07 : 0.14	5.55	0.000
GHC → NVI	0.07***	0.02	0.03 : 0.11	3.38	0.001
NVI → OB1	0.25***	0.04	0.17 : 0.33	5.89	0.000
Model fit: $\chi^2(2) = 11.66$; $p \leq 0.001$; CFI = 0.88; RMSEA = 0.00; SRMR = 0.03; N = 31,470					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

SHC = Specific Human Capital; GHC = General Human Capital; NVI = Ability to generate new venture ideas; OB1 = Favorability 1st-Person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE E5. Coefficients for full-effect model—excluding Ye (2012) and McCann (2017) (see Figure 4)

	Coefficient	SE	95% CI	*z* value	*p* value
SHC → NVI	0.10***	0.02	0.06 : 0.14	5.52	0.000
GHC → NVI	0.06**	0.02	0.02 : 0.10	3.18	0.001
NVI → OB3	0.37***	0.05	0.27 : 0.46	7.63	0.000
OB3 → OB1	0.54***	0.03	0.48 : 0.61	17.43	0.000

Model fit: $\chi^2(5) = 15.84$; $p \leq 0.01$; CFI = 0.97; RMSEA = 0.00; SRMR = 0.03; N = 357,574

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

SHC = Specific Human Capital; GHC = General Human Capital; NVI = Ability to generate new venture ideas; OB3 = Favorability 3rd-Person Opportunity Beliefs; OB1 = Favorability 1st-Person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE E6. Coefficients for direct-effect model—excluding Ye (2012) and McCann (2017) (see Figure B1a)

	Coefficient	SE	95% CI	*z* value	*p* value
EK → OB3	-0.01	0.02	-0.05 : 0.04	-0.25	0.802
WE → OB3	0.00	0.06	-0.11 : 0.11	-0.02	0.986
EE → OB3	0.04	0.03	-0.02 : 0.11	1.28	0.199
IE → OB3	0.01	0.03	-0.05 : 0.08	0.34	0.738
NVI → OB3	0.29***	0.06	0.17 : 0.42	4.76	0.000
Model fit: $\chi^2(4) = 39.08$; $p \leq 0.001$; CFI = 0.64; RMSEA = 0.00; SRMR = 0.05; N = 343,824					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

EK = Education-based Knowledge; WE = Work Experience; EE = Entrepreneurship Experience; IE = Industry Experience; NVI = Ability to generate new venture ideas; OB3 = Favorability 3rd-person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE E7. Coefficients for direct-effect model—excluding Ye (2012) and McCann (2017) (see Figure B1b)

	Coefficient	SE	95% CI	*z* value	*p* value
EK → OB1	0.00	0.02	-0.04 : 0.04	0.00	0.998
WE → OB1	0.04	0.03	-0.01 : 0.10	1.46	0.145
EE → OB1	0.05**	0.02	0.02 : 0.09	3.01	0.003
IE → OB1	0.06**	0.02	0.01 : 0.10	2.62	0.009
NVI → OB1	0.20***	0.04	0.12 : 0.28	4.82	0.000
Model fit: $\chi^2(4) = 40.39$; $p \leq 0.001$; CFI = 0.69; RMSEA = 0.02; SRMR = 0.05; N = 32,092					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

EK = Education-based Knowledge; WE = Work Experience; EE = Entrepreneurship Experience; IE = Industry Experience; NVI = Ability to generate new venture ideas; OB1 = Favorability 1st-person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE E8. Coefficients for mediated-effect model—excluding Ye (2012) and McCann (2017) (see Figure B2)

	Coefficient	SE	95% CI	*z* value	*p* value
EK → NVI	0.06*	0.03	0.01 : 0.11	2.19	0.028
WE → NVI	0.08**	0.03	0.02 : 0.13	2.62	0.009
EE → NVI	0.10***	0.02	0.05 : 0.15	4.19	0.000

IE → NVI	0.09***	0.02	0.04 : 0.14	3.50	0.000
NVI → OB1	0.26***	0.04	0.18 : 0.34	6.53	0.000
Model fit: $\chi^2(4) = 12.40$; $p \leq 0.05$; CFI = 0.93; RMSEA = 0.01; SRMR = 0.02; N = 32,092					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

EK = Education-based Knowledge; WE = Work Experience; EE = Entrepreneurship Experience; IE = Industry Experience; NVI = Ability to generate new venture ideas; OB1 = Favorability 1st-person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE E9. Coefficients for full-effect model—excluding Ye (2012) and McCann (2017) (see Figure B3)

	Coefficient	SE	95% CI	*z* value	*p* value
EK → NVI	0.05†	0.03	0.00 : 0.10	1.95	0.014
WE → NVI	0.07*	0.03	0.02 : 0.13	2.47	0.001
EE → NVI	0.10***	0.02	0.05 : 0.15	4.14	0.051
IE → NVI	0.08**	0.02	0.03 : 0.13	3.25	0.000
NVI → OB3	0.37***	0.05	0.28 : 0.46	8.00	0.014
OB3 → OB1	0.54***	0.03	0.49 : 0.60	18.08	0.001
Model fit: $\chi^2(9) = 17.77$; $p \leq 0.05$; CFI = 0.98; RMSEA = 0.00; SRMR = 0.03; N = 357,581					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

EK = Education-based Knowledge; WE = Work Experience; EE = Entrepreneurship Experience; IE = Industry Experience; NVI = Ability to generate new venture ideas; OB3 = Favorability 3rd-person Opportunity Beliefs; OB1 = Favorability 1st-person Opportunity Beliefs; SE = Standard Error; CI = Confidence Interval; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

APPENDIX F

Results of Fitting the SEM Models Using the Harmonic Mean as the Sample Size

TABLE F1. Conventional MASEM (Viswesvaran & Ones, 1995) results for direct-effect model (see Figure 2a)

	Coefficient	SE	95% CI	*z* value	*p* value
SHC → OB3	0.01	0.02	-0.02 : 0.05	0.82	0.412
GHC → OB3	-0.02	0.02	-0.05 : 0.02	-0.97	0.330
NVI → OB3	0.31***	0.02	0.28 : 0.34	20.30	0.000
Model fit: $\chi^2(2) = 45.23$; $p \leq 0.001$; CFI = 0.89; RMSEA = 0.08; SRMR = 0.04; Harmonic Mean = 3,375					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

SHC = Specific Human Capital; GHC = General Human Capital; NVI = Ability to generate new venture ideas; OB3 = Favorability 3rd-Person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE F2. Conventional MASEM (Viswesvaran & Ones, 1995) results for direct-effect model (see Figure 2b)

	Coefficient	SE	95% CI	*z* value	*p* value
SHC → OB1	0.06***	0.01	0.04 : 0.08	5.34	0.000
GHC → OB1	0.02	0.01	0.00 : 0.04	1.63	0.103
NVI → OB1	0.20***	0.01	0.18 : 0.22	18.62	0.000
Model fit: $\chi^2(2) = 102.25$; $p \leq 0.001$; CFI = 0.82; RMSEA = 0.08; SRMR = 0.04; Harmonic N = 7,630					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

SHC = Specific Human Capital; GHC = General Human Capital; NVI = Ability to generate new venture ideas; OB1 = Favorability 1st-Person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE F3. Conventional MASEM (Viswesvaran & Ones, 1995) results for mediated-effect model (see Figure 3)

	Coefficient	SE	95% CI	*z* value	*p* value
SHC → NVI	0.08***	0.01	0.06 : 0.11	7.34	0.000
GHC → NVI	0.07***	0.01	0.05 : 0.09	6.36	0.000
NVI → OB1	0.21***	0.01	0.19 : 0.23	19.19	0.000
Model fit: $\chi^2(2) = 32.76$; $p \leq 0.001$; CFI = 0.94; RMSEA = 0.05; SRMR = 0.02; Harmonic N = 7,630					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

SHC = Specific Human Capital; GHC = General Human Capital; NVI = Ability to generate new venture ideas; OB1 = Favorability 1st-Person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE F4. Conventional MASEM (Viswesvaran & Ones, 1995) results for full effect model (see Figure 4)

	Coefficient	SE	95% CI	*z* value	*p* value
SHC → NVI	0.08***	0.02	0.05 : 0.12	5.17	0.000
GHC → NVI	0.07***	0.02	0.04 : 0.10	4.48	0.000
NVI → OB3	0.31***	0.01	0.28 : 0.34	21.10	0.000
OB3 → OB1	0.49***	0.01	0.47 : 0.51	39.68	0.000
Model fit: $\chi^2(5) = 39.19$; $p \leq 0.001$; CFI = 0.98; RMSEA = 0.04; SRMR = 0.02; Harmonic N = 3,786					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

SHC = Specific Human Capital; GHC = General Human Capital; NVI = Ability to generate new venture ideas; OB3 = Favorability 3rd-Person Opportunity Beliefs; OB1 = Favorability 1st-Person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE F5. Conventional MASEM (Viswesvaran & Ones, 1995) results for direct-effect model (see Figure B1a)

	Coefficient	SE	95% CI	*z* value	*p* value
EK → OB3	-0.03	0.02	-0.06 : 0.01	-1.56	0.119
WE → OB3	0.00	0.02	-0.04 : 0.03	-0.22	0.825
EE → OB3	0.02	0.02	-0.02 : 0.05	1.06	0.290
IE → OB3	0.00	0.02	-0.03 : 0.03	0.10	0.922
NVI → OB3	0.31***	0.02	0.28 : 0.34	19.95	0.000
Model fit: $\chi^2(4) = 102.73$; $p \leq 0.001$; CFI = 0.84; RMSEA = 0.08; SRMR = 0.04; Harmonic N = 3,303					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

EK = Education-based Knowledge; WE = Work Experience; EE = Entrepreneurship Experience; IE = Industry Experience; NVI = Ability to generate new venture ideas; OB3 = Favorability 3rd-person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE F6. Conventional MASEM (Viswesvaran & Ones, 1995) results for direct-effect model (see Figure B1b)

	Coefficient	SE	95% CI	*z* value	*p* value
EK → OB1	0.00	0.01	-0.02 : 0.02	-0.03	0.974
WE → OB1	0.04**	0.01	0.01 : 0.06	3.03	0.002
EE → OB1	0.04***	0.01	0.01 : 0.06	2.95	0.003
IE → OB1	0.05***	0.01	0.03 : 0.08	4.42	0.000
NVI → OB1	0.20***	0.01	0.17 : 0.22	16.31	0.000
Model fit: $\chi^2(4) = 187.78$; $p \leq 0.001$; CFI = 0.79; RMSEA = 0.09; SRMR = 0.04; Harmonic N = 6,326					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

EK = Education-based Knowledge; WE = Work Experience; EE = Entrepreneurship Experience; IE = Industry Experience; NVI = Ability to generate new venture ideas; OB1 = Favorability 1st-

person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE F7. Conventional MASEM (Viswesvaran & Ones, 1995) results for mediated-effect model (see Figure B2)

	Coefficient	SE	95% CI	*z* value	*p* value
EK → NVI	0.07***	0.01	0.05 : 0.10	5.75	0.000
WE → NVI	0.08***	0.01	0.05 : 0.10	6.03	0.000
EE → NVI	0.09***	0.01	0.06 : 0.11	6.86	0.000
IE → NVI	0.07***	0.01	0.05 : 0.10	5.75	0.000
NVI → OB1	0.21***	0.01	0.19 : 0.23	17.47	0.000
Model fit: $\chi^2(4) = 46.08$; $p \leq 0.001$; CFI = 0.95; RMSEA = 0.04; SRMR = 0.02; Harmonic N = 6,326					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$
EK = Education-based Knowledge; WE = Work Experience; EE = Entrepreneurship Experience; IE = Industry Experience; NVI = Ability to generate new venture ideas; OB1 = Favorability 1st-person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE F8. Conventional MASEM (Viswesvaran & Ones, 1995) results for full-effect model (see Figure B3)

	Coefficient	SE	95% CI	*z* value	*p* value
EK → NVI	0.07***	0.02	0.04 : 0.10	4.38	0.000
WE → NVI	0.08***	0.02	0.04 : 0.11	4.60	0.000
EE → NVI	0.09***	0.02	0.05 : 0.12	5.23	0.000
IE → NVI	0.07***	0.02	0.04 : 0.10	4.38	0.000
NVI → OB3	0.31***	0.01	0.28 : 0.34	20.78	0.000
OB3 → OB1	0.49***	0.01	0.47 : 0.51	39.07	0.000
Model fit: $\chi^2(9) = 53.62$; $p \leq 0.001$; CFI = 0.97; RMSEA = 0.04; SRMR = 0.02; Harmonic N =3,671					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$
EK = Education-based Knowledge; WE = Work Experience; EE = Entrepreneurship Experience; IE = Industry Experience; NVI = Ability to generate new venture ideas; OB3 = Favorability 3rd-person Opportunity Beliefs; OB1 = Favorability 1st-person Opportunity Beliefs; SE = Standard Error; CI = Confidence Interval; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

APPENDIX G

Sensitivity Analyses of Excluding Low Q-Sort Agreement Measures of Opportunity Beliefs

TABLE G1. Coefficients for direct-effect model—excluding low q-sort agreement items (see Figure 2a)

	Coefficient	SE	95% CI	*z* value	*p* value
SHC → OB3	0.04	0.03	-0.01 : 0.09	1.47	0.141
GHC → OB3	-0.01	0.02	-0.05 : 0.04	-0.23	0.815
NVI → OB3	0.38***	0.08	0.23 : 0.53	5.06	0.000
Model fit: $\chi^2(2) = 30.57$; $p < 0.001$; CFI = 0.62; RMSEA = 0.01; SRMR = 0.05; N =					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$; SHC = Specific Human Capital; GHC = General Human Capital; NVI = Ability to generate new venture ideas; OB3 = Favorability 3rd-Person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE G2. Coefficients for direct-effect model—excluding low q-sort agreement items (see Figure 2b)

	Coefficient	SE	95% CI	*z* value	*p* value
SHC → OB1	0.06***	0.01	0.03 : 0.09	4.31	0.000
GHC → OB1	0.02	0.02	-0.01 : 0.06	1.20	0.231
NVI → OB1	0.18***	0.05	0.09 : 0.27	3.82	0.000
Model fit: $\chi^2(2) = 31.34$; $p < 0.001$; CFI = 0.62; RMSEA = 0.02; SRMR = 0.05; N =					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

SHC = Specific Human Capital; GHC = General Human Capital; NVI = Ability to generate new venture ideas; OB1 = Favorability 1st-Person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE G3. Coefficients for mediated-effect model—excluding low q-sort agreement items (see Figure 3)

	Coefficient	SE	95% CI	*z* value	*p* value
SHC → NVI	0.10***	0.02	0.07 : 0.14	5.50	0.000
GHC → NVI	0.07***	0.02	0.03 : 0.11	3.39	0.001
NVI → OB1	0.25***	0.04	0.16 : 0.33	5.47	0.000
Model fit: $\chi^2(2) = 12.17$; $p < 0.001$; CFI = 0.87; RMSEA = 0.00; SRMR = 0.03; N =					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

SHC = Specific Human Capital; GHC = General Human Capital; NVI = Ability to generate new venture ideas; OB1 = Favorability 1st-Person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE G4. Coefficients for full-effect model—excluding low q-sort agreement items (see Figure 4)

	Coefficient	SE	95% CI	*z* value	*p* value
SHC → NVI	0.10***	0.02	0.07 : 0.14	5.57	0.000
GHC → NVI	0.06**	0.02	0.02 : 0.10	3.06	0.002
NVI → OB3	0.43***	0.06	0.32 : 0.54	7.54	0.000
OB3 → OB1	0.49***	0.03	0.43 : 0.55	16.40	0.000
Model fit: $\chi^2(5) = 17.45$; $p < 0.001$; CFI = 0.96; RMSEA = 0.00; SRMR = 0.02; N =					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

SHC = Specific Human Capital; GHC = General Human Capital; NVI = Ability to generate new venture ideas; OB3 = Favorability 3rd-Person Opportunity Beliefs; OB1 = Favorability 1st-Person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE G5. Coefficients for direct-effect model—excluding low q-sort agreement items (see Figure B1a)

	Coefficient	SE	95% CI	*z* value	*p* value
EK → OB3	-0.01	0.02	-0.05 : 0.04	-0.43	0.667
WE → OB3	0.00	0.06	-0.12 : 0.11	-0.08	0.933
EE → OB3	0.04	0.04	-0.03 : 0.11	1.16	0.247
IE → OB3	0.01	0.03	-0.05 : 0.07	0.37	0.711
NVI → OB3	0.38***	0.07	0.24 : 0.52	5.19	0.000
Model fit: $\chi^2(4) = 39.41$; $p < 0.001$; CFI = 0.66; RMSEA = 0.00; SRMR = 0.05; N =					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

EK = Education-based Knowledge; WE = Work Experience; EE = Entrepreneurship Experience; IE = Industry Experience; NVI = Ability to generate new venture ideas; OB3 = Favorability 3rd-person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE G6. Coefficients for direct-effect model—excluding low q-sort agreement items (see Figure B1b)

	Coefficient	SE	95% CI	*z* value	*p* value
EK → OB1	0.01	0.02	-0.04 : 0.05	0.31	0.758
WE → OB1	0.04	0.03	-0.02 : 0.10	1.26	0.208
EE → OB1	0.05**	0.02	0.02 : 0.09	2.90	0.004
IE → OB1	0.06**	0.02	0.01 : 0.10	2.62	0.009
NVI → OB1	0.19***	0.04	0.10 : 0.28	4.22	0.000
Model fit: $\chi^2(4) = 39.82$; $p < 0.001$; CFI = 0.68; RMSEA = 0.02; SRMR = 0.05; N =					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

EK = Education-based Knowledge; WE = Work Experience; EE = Entrepreneurship Experience; IE = Industry Experience; NVI = Ability to generate new venture ideas; OB1 = Favorability 1st-person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE G7. Coefficients for mediated-effect model—excluding low q-sort agreement items (see Figure B2)

	Coefficient	SE	95% CI	*z* value	*p* value
EK → NVI	0.06*	0.03	0.01 : 0.12	2.27	0.023
WE → NVI	0.08*	0.03	0.02 : 0.13	2.55	0.011
EE → NVI	0.10***	0.02	0.05 : 0.15	4.10	0.000
IE → NVI	0.09***	0.03	0.04 : 0.14	3.47	0.001
NVI → OB1	0.26***	0.04	0.17 : 0.34	6.02	0.000
Model fit: $\chi^2(4) = 11.79$; $p < 0.05$; CFI = 0.93; RMSEA = 0.01; SRMR = 0.02; N =					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

EK = Education-based Knowledge; WE = Work Experience; EE = Entrepreneurship Experience; IE = Industry Experience; NVI = Ability to generate new venture ideas; OB1 = Favorability 1st-person Opportunity Beliefs; SE = Standard Error; 95% CI = Confidence Interval for Coefficient; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

TABLE G8. Coefficients for full-effect model—excluding low q-sort agreement items (see Figure B3)

	Coefficient	SE	95% CI	*z* value	*p* value
EK → NVI	0.05†	0.03	0.00 : 0.10	1.85	0.064
WE → NVI	0.07*	0.03	0.01 : 0.13	2.36	0.018
EE → NVI	0.10***	0.02	0.05 : 0.15	4.03	0.000
IE → NVI	0.08**	0.02	0.03 : 0.13	3.27	0.001
NVI → OB3	0.43***	0.06	0.32 : 0.54	7.82	0.000
OB3 → OB1	0.49***	0.03	0.44 : 0.55	16.91	0.000
Model fit: $\chi^2(9) = 17.69$; $p < 0.05$; CFI = 0.98; RMSEA = 0.00; SRMR = 0.02; N =					

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; † $p \leq 0.10$

EK = Education-based Knowledge; WE = Work Experience; EE = Entrepreneurship Experience; IE = Industry Experience; NVI = Ability to generate new venture ideas; OB3 = Favorability 3rd-person Opportunity Beliefs; OB1 = Favorability 1st-person Opportunity Beliefs; SE = Standard Error; CI = Confidence Interval; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.