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The Roles of Learning Orientation and Passion for Work in the Formation of Entrepreneurial Intention

Abstract

To extend understanding of the drivers that underlie entrepreneurial intention formation, we investigate the hitherto underexplored roles of people's learning orientation and passion for work. We consider how these personal characteristics may moderate the instrumentality of (1) people's perceived ability to become a successful entrepreneur and (2) their perceived attractiveness of becoming an entrepreneur. Using a survey of 946 university students, we find that learning orientation and passion for work invigorate the role of these feasibility and desirability considerations in enhancing entrepreneurial intention. A follow-up analysis also reveals that the moderating effects of learning orientation and passion for work on the perceived attractiveness–entrepreneurial intention relationship are stronger to the extent that people value the intrinsic goal of autonomy in their future career more greatly, but these moderating effects are immune for the importance of the extrinsic goal of earning financial rewards. Several implications for research and practice emerge.

Keywords: entrepreneurial intention, learning orientation, passion for work, theory of planned behavior

Introduction

New venture creation is a process that unfolds over time (Gartner et al., 1992; Gartner et al., 1994), in which the formation of entrepreneurial intention represents the first stage (Bird, 1988; Krueger et al., 2000; Kautonen et al., 2010; Lee et al., 2011). A person's entrepreneurial intention reflects his or her level of interest in starting a business (Fitzsimmons and Douglas, 2011; Krueger et al., 2000; Lent et al., 1994), which provides a professional trajectory that is an alternative to regular employment (Lent et al., 2004; Schjoedt and Shaver, 2007). Entrepreneurship scholars focus on such entrepreneurial intentions because they represent one of the few measurable outcomes of entrepreneurship education (Fitzsimmons and Douglas, 2011; Franke and Lüthje, 2004). Since motivation scholars maintain that intentions offer good predictors of behavior (Ajzen, 1991; Armitage and Conner, 2001), a strong understanding of the factors that influence entrepreneurial intentions remains critical to explaining entrepreneurial behavior (Shane and Venkataraman, 2000).

Entrepreneurial intentions depend on external factors, such as the presence of an unfavorable economic environment or a lack of regular employment career options (Evans and Leighton, 1989; Ghatak et al., 2007; Shapero and Sokol, 1982), but not everyone develops the same intentions in the face of the same external circumstances. This scenario suggests an important role for individual factors, including personality (Zhao et al., 2010); demographic characteristics such as age (Blanchflower, 2004; Levesque and Minniti, 2006), gender (Brush, 1992; Minniti and Nardone, 2007), and education (Autio and Acs, 2010; Blanchflower and Oswald, 1998); cognitive factors (Baron, 2004); and, significantly, beliefs that a career as an entrepreneur is feasible and desirable (Fitzsimmons and Douglas, 2011; Krueger et al., 2000).

To extend extant literature, this study investigates the intricate interplay among such feasibility and desirability considerations and two individual characteristics that have received scant attention in entrepreneurship research: learning orientation and passion for work. *Learning orientation* reflects people's propensity to continuously update their current knowledge set; it thus taps into people's cognitive abilities (Armstrong and Mahmud, 2008; Kolb, 1984; VandeWalle et al., 1999). *Passion for work* captures the extent to which people "love" to work and derive joy from investing in work-related activities (Baum and Locke, 2004; Shane et al., 2003). Unlike learning orientation, passion for work thus captures an emotional aspect of people's approach to work (Frijda et al., 1991; Vallerand et al., 2003); yet it also relates to cognition, in the sense that people who are passionate about work tend to engage in more intensive and systematic knowledge processing when task-related demands require it (Frederickson, 1998; Ho et al., 2011).

The principal research question that drives this study is how the two aforementioned individual characteristics (learning orientation and passion for work) might affect the potency with which people's perceived *ability* to become a successful entrepreneur and their perceived *attractiveness* of becoming an entrepreneur inform their entrepreneurial intention. In so doing, we aim to make the following two contributions. First, by investigating such contingencies, we address calls to consider the intricate relationships among people's individual characteristics, career-related motivations, and entrepreneurial aspirations in one integrated framework (Franke and Lüthje, 2004; Lee et al., 2011; Lent et al., 1994), particularly in terms of how the former may invigorate the feasibility and desirability motivations that lead to the decision to start a new business (Fitzsimmons and Douglas, 2011). The examination of individual-level contingencies in entrepreneurial intention formation is particularly important because it answers the question of which personal factors might facilitate or impede the conversion of entrepreneurship-specific motivations into the

intention to actually become an entrepreneur (Franke and Lüthje, 2004; Lent et al., 1994), which arguably is a career that is contingent, challenging, and marked by high levels of uncertainty (Sarasvathy, 2008).

Second, to the best of our knowledge, this study represents the first empirical examination of the roles of learning orientation and passion for work in entrepreneurial intention literature. These characteristics capture how people value and process knowledge in their daily work. Their consideration in the formation of entrepreneurial intentions is important, in that they complement extant literature that tends to focus on how people's "static" access to knowledge informs their inclination or decision to start a new venture (Davidsson and Honig, 2003; De Clercq and Arenius, 2006). Instead, learning orientation and passion for work imply a dynamic aspect in that they speak to the *ongoing* efforts that people devote to knowledge renewal and work-related activities, respectively (Baum et al., in press; Baum and Locke, 2004). Because these characteristics are theorized to be somewhat malleable, they contrast implicit attitudes and beliefs that are stable and offer little or no opportunity for intervention among adults. Further, we argue that these characteristics are critical in that they can help trigger perceptions about the feasibility and desirability of entrepreneurship into actual formation of entrepreneurial intention.

Theory and Hypotheses

Theoretical Background

Understanding the drivers underlying entrepreneurial intention formation is important, because new ventures do not emerge by accident but instead are the result of specific, intentional choices (Bird, 1988). For example, Learned (1992) argues that intentionality is a key component of the entrepreneurial process, and Herron and Sapienza (1992) point to the critical role of entrepreneurs' "aspiration levels" in their venture initiation model. The strength of entrepreneurial intentions in the very early stages may matter for the

future direction of the ventures to be created, because subsequent growth and success depend on these intentions (Bird, 1988).

One stream in entrepreneurship research, which relies on the theory of planned behavior (Ajzen, 1991, 2001), argues that such “intentionality” is driven in part by three factors: perceived behavioral control or the perceived ease to “perform” entrepreneurial behavior, the general attitude toward entrepreneurship or the extent to which a person has a favorable evaluation of entrepreneurship as a career, and subjective norms or the perceived social norms that entrepreneurship is an “acceptable” career choice (Kolvereid, 1996b; Linan and Chen, 2009). In turn, others have applied this theory to predict entrepreneurial intention based on people’s feasibility- and desirability-driven motivations (Fitzsimmons and Douglas, 2011; Krueger & Brazeal, 1994; Krueger et al., 2000). While the feasibility motivation encompasses Ajzen’s (1991) perceived behavioral control dimension, the desirability counterpart includes both the attitude and subjective norm dimensions (Kolvereid, 1996b; Krueger and Bazal, 1994). The distinction between feasibility and desirability also mirrors claims in career choice literature, which which posits that people’s interests in a particular career are informed by whether they view themselves as capable for the career and find such career attractive and desirable (Bets and Rottinghaus, 2006; Lent et al., 1994).

In the context of our research, we label the aforementioned feasibility- and desirability-driven motivations as (1) people’s perceived *ability* to become a successful entrepreneur and (2) the perceived *attractiveness* of becoming an entrepreneur.¹ The perceived ability to be a successful entrepreneur is akin to the notion of self-efficacy or the belief that one has the capabilities to perform well on designated tasks (Bets and Rottinghaus, 2006; Gatewood et al., 2002; Krueger et al., 2000). Perceived attractiveness encompasses the

¹ In this article we consider only the “attitude” component of the desirability motivation, and not the subjective norm component, because there is some controversy about the direct effect of subjective norms on entrepreneurial intention in that such norms may indirectly impact entrepreneurial intention *through* perceived behavioural control and attitudes (Linan and Chen, 2009).

belief that a career choice as entrepreneur will have desirable consequences (Krueger et al., 2000; Liñán and Chen, 2009). Similar to prior research (Creed, Fallon, & Hood, 2009; Fitzsimmons & Douglas, 2011; Lent et al., 1994; Souitaris et al., 2007), we examine these issues for the *early career* interests of young adults, which admittedly entails a boundary on our proposed framework. However, though individual considerations of feasibility and desirability may influence subsequent career adjustments throughout a person's entire career trajectory, these later adjustments tend to be subject to a broad set of factors, such as dissatisfaction with a current job or a desire for a lifestyle change (Super, 1990). Those factors are beyond the scope of this article. Our goal thus is to understand the emergence of entrepreneurial intentions early in a person's career trajectory, when educational interventions are most likely to occur, rather than to offer a broader theory of lifelong career intentions (Super, 1990); accordingly, we adopt a focused approach toward explaining someone's interest in starting his or her own business (Franke & Lüthje, 2004; Lent et al., 1994).

We examine how the relationship between people's perceptions of ability and attractiveness on the one hand and the formation of entrepreneurial intentions on the other may be influenced by two personal characteristics that have received limited attention in entrepreneurship research, namely, learning orientation and passion for work. Our key argument is that the extent to which people are prone to update their current knowledge set with new knowledge continuously (learning orientation) and the passion with which they undertake work-related activities (passion for work) may have instrumental importance with regard to how their reflections about feasibility and desirability translate into entrepreneurial intention. In so doing we respond to calls to create a better understanding of and empirically test how certain contingency factors might facilitate or hinder the conversion of career-specific motivations into entrepreneurial intention formation (Lent et al., 1994), particularly

those that may help alleviate the complexity and ambiguity surrounding entrepreneurship (Sarasvathy, 2008). Therefore, we do not suggest that people's learning orientation and passion for work are relevant for the formation of entrepreneurial intention only and would not matter for alternative career choices; rather we argue that to the extent that certain people perceive an entrepreneurial career as highly feasible or desirable, their learning orientation and passion for work will facilitate the translation of such feasibility and desirability considerations into actual entrepreneurial intention formation.

Learning orientation. Individual learning is a dialectical process that comprises both people's access to new knowledge and their ability to assimilate such new knowledge in their current knowledge set (Baum et al., in press; Kolb, 1984). Thus, learning is the process by which people transform new experiences into combinations of new and existing knowledge (Joy and Kolb, 2009).² This transformational capability is reflected in people's *learning orientation*, defined as the propensity to be continuously on the lookout for new knowledge (Dweck, 1986; Dweck and Leggett, 1988; VandeWalle et al., 1999).³ Learning theory suggests that the propensity to acquire new knowledge and subsequently integrate this knowledge in the existing knowledge set increases the ability to deal with problems and uncertain situations, because continuously updating the current knowledge set increases the capacity to find novel solutions for current problems (Cohen and Levinthal, 1990; Honig, 2004; Piaget, 1950). Therefore, in the assessments of the pros and cons of an entrepreneurial career, which is arguably marked by high levels of uncertainty (Sarasvathy, 2001, 2008; Schoonhoven et al., 2009), a learning orientation may function as a critical trigger that

² Thus, while learning essentially is a process, the generation of knowledge is an outcome of it (Kolb, 1984). We thank an anonymous reviewer for pointing out this critical distinction.

³ A person's learning orientation represents a particular type of goal orientation, of which performance orientation is another facet (Seijts et al., 2004). Whereas a performance orientation focuses on people's concerns about the end result when undertaking a particular task, such as the consequences of good or bad performance, a learning orientation focuses on the process of acquiring and mastering new skills (Seijts et al., 2004). The latter is more potent for reducing uncertainty underlying complex tasks (Baum et al., in press; Vandwalle et al., 1999) and therefore should be particularly instrumental in considerations of a highly uncertain career, such as starting one's own business (Sarasvathy, 2008).

transforms career-specific considerations with respect to entrepreneurship into the intention to become an entrepreneur.

With the exception of Zhao et al. (2010), who tangentially consider this characteristic when discussing the role of people's openness to new experiences, and a recent study by Baum et al. (in press) on the implications of entrepreneurs' learning orientation for their practical intelligence, entrepreneurship scholarship has largely ignored the role of people's learning orientation. To bridge this gap, we place learning orientation in a central position in our theoretical framework. We acknowledge, however, that entrepreneurship is not the only career that implies high levels of uncertainty and risk and thus may benefit from a strong learning orientation (Ho et al., 2011); accordingly, our model and hypotheses (discussed further below) do not consider the direct effect of learning orientation, but rather its indirect effect such that this orientation might influence the potency of people's feasibility and desirability-driven considerations with respect to entrepreneurship to enhance entrepreneurial intention.

The consideration of learning orientation in entrepreneurial intention formation is also important from a practical perspective because people's learning orientation is not completely set in stone. Although it is dispositional (Dweck, 1986), its manifestation may fluctuate to some extent with situational conditions and contexts (Ames and Archer, 1988; Button et al., 1996; Dragoni et al., 2009). For example, people may become more learning oriented when they confront the need to undertake challenging tasks or when they are encouraged by others to question their current knowledge set (e.g. Ames and Archer, 1988; Dragoni, 2005). Thus, a person's learning orientation, although exhibiting many of the qualities of a trait, is still a somewhat malleable individual characteristic (Button et al., 1996; Maurer et al., 2003, Van Hooft & Noordzij, 2009). As such, it can be of particular interest to

entrepreneurship educators, because it offers an opportunity to intervene in and facilitate the career decisions of young adults (Franke and Lüthje, 2004).

Passion for work. An equally important but also underexplored personal characteristic that may be relevant in entrepreneurial intention formation is people's passion for work. Prior research differentiates obsessive from harmonious passion; the former characterizes workaholics, and the latter refers to people who are voluntarily enthusiastic about their work (Ho et al., 2011; Vallerand et al., 2003). Harmonious passion thus acknowledges an emotional component, such that the passion people exhibit for work-related activities might reflect how they define themselves (Ho et al., 2011). Similarly, we conceptualize passion for work as the extent to which people experience feelings of pleasantness and joy when engaging in intensive work-related activities (Baum and Locke, 2004; Richie et al., 1997). Such passion captures not only an emotional element, but also a cognitive one because it informs the cognitive efforts people are willing to allocate to work-related activities. Significantly, the greater the intensity or passion with which people undertake work-related tasks, the greater their ability to reduce uncertainty in meeting corresponding work-related goals because such intensity exposes them to a greater variety of options to solve challenging situations (Frederickson, 1998; Ho et al., 2011; Vallerand et al., 2003). For example, it has been shown that people's cognitive engagement, or the extent to which they are focused and psychologically present when undertaking a particular task, mediates between their harmonious passion and work performance (Ho et al., 2011).

Extant entrepreneurship literature argues that an entrepreneurial career is marked by high levels of passion (Bird, 1989; Cardon et al., 2009), and that passion is "perhaps the most observed phenomenon of the entrepreneurial process" (Smilor, 1997: 342; see also Baum and Locke, 2004). Although researchers have considered the relationship between passion for work and subsequent motivations for venture growth (Baum and Locke, 2004), limited

attention has been devoted to how this personal characteristic may affect the instrumentality of career-specific motivations for increasing entrepreneurial intention. Importantly, entrepreneurship research instead has focused mostly on the role of *entrepreneurial* passion, or the personal joy a person derives from engaging in specific activities that come with the job of being an entrepreneur—such as inventing new products and services or developing a business venture to bring such products and services to market (Cardon et al., 2009). However, such entrepreneurial passion may not be equally important or pertinent to everyone in society, or everyone who starts a new business. For example, passion about specific entrepreneurial activities, and its role in entrepreneurial intention formation, may be less relevant among young adults who have not gained any direct experience as an entrepreneur (Fitzsimmons and Douglas, 2011; Lent et al., 1994). Thus, because young people who have yet to experience the actual creation of an enterprise likely lack a clear idea of the specific activities involved in launching and developing a venture, we consider our focus on a person's passion for work in general, rather than entrepreneurial passion, appropriate. Because the nature of entrepreneurial endeavors varies considerably, studying an individual's general passion for work may be a more inclusive and relevant measure, as not all start-ups require high degrees of invention and innovation. Further, our focus on people's passion for work *in general*, rather than passion for entrepreneurship, resonates with the premise that we are not interested so much in the direct effects of people's passion on their entrepreneurial intention, but rather on how their passion may leverage career-specific motivations that they already have into entrepreneurial intention formation.

The investigation of passion for work in the formation of entrepreneurial intention also has great practical relevance, because it can inform entrepreneurship educators' understanding of how variations in the intensity with which people engage in work-related activities may be relevant for leveraging specific career motivations. Important herein, and

similar to learning orientation, is the notion that people's passion for work may be subject to change, according to external circumstances such as perceptions of the organizational context in which one operates (Burke and Fiksenbaum, 2009; Luthans, 2002). For example, a person could exhibit a strong passion for work if he or she is allowed to experiment with new ideas without direct interference by others; yet that same person may be less passionate about work when operating in an environment marked by a heavy focus on following procedures and rules (Frijda et al., 1991; Vallerand et al., 2003).

Figure 1 summarizes our conceptual model. It starts with established findings that indicate that both people's perceived ability to become a successful entrepreneur and the perceived attractiveness of an entrepreneurial career affect their entrepreneurial intentions (Fitzsimmons and Douglas, 2011; Kolvereid, 1996a, 1996b; Krueger et al., 2000, Lent et al., 2004; Lian and Chen, 2009). Because people's learning orientation and passion for work might also be important influences on alternative careers that imply high levels of uncertainty and risk (Ho et al., 2011; Patrick et al., 2011), the proposed model does not include the direct effects of these two characteristics on entrepreneurial intention. Instead, we focus on the possible moderating effects of learning orientation and passion for work on the relationships between perceived ability and attractiveness on the one hand and entrepreneurial intentions on the other hand.

Insert Figure 1 about here

The Moderating Role of Learning Orientation

We argue that people's learning orientation positively moderates the relationship between their perceived ability to become a successful entrepreneur and their entrepreneurial intention. As mentioned previously, a learning orientation reflects people's propensity to expand their current knowledge set continuously (Ames and Archer, 1988; Dweck, 1986). Because people with a strong learning orientation are more prone to engage in "active

experimentation”—in which they acquire new knowledge through experiences in real-life situations (Baum et al., in press)—they are in a better position to leverage the potential inherent in their current knowledge set by infusing it with new knowledge and insights (Kolb, 1984). Thus, a strong learning orientation is important not only for the maintenance of one’s current knowledge set (Gong and Fan, 2006), but also provides diagnostic information about how current knowledge can be expanded and leveraged to address new challenges (Dweck and Leggett, 1988). Similarly, a strong learning orientation can facilitate the leveraging of current knowledge (Armstrong and Mahmud, 2008), because the dynamic change of the current knowledge set that it implies facilitates the integration of new with old knowledge and thus the ability to solve problems in uncertain situations, as might be anticipated in an entrepreneurial career (Baum et al., in press; Sarasvathy, 2001).

Further, a core feature of a career as an entrepreneur is the inherent likelihood of *failure* and the associated challenge to diminish the odds of failure (Honig, 2004; Murphy et al., 1996). People with a strong learning orientation likely perceive that they can successfully exploit their past and ongoing relevant experiences to cope with the anticipated difficulties of future activities (Dweck and Leggett, 1988; VandeWalle, 1997), so they may view their current knowledge set as an opportunity to overcome the pitfalls that mark a career as an entrepreneur. Similarly, people with a strong learning orientation likely adapt themselves more easily to the difficulty of (entrepreneurial) tasks that come their way through increased efforts to retrieve specific knowledge from their current skill set that is relevant for the task at hand (Ames and Archer, 1988; Maurer et al., 2003; Porter and Tansky, 1999). Finally, people with a strong learning orientation are attracted to tasks that are complex and knowledge intensive (Ames and Archer, 1988) and view the application of their current entrepreneurship-relevant knowledge to solve complex tasks as sources of personal growth and fulfillment rather than as burdens (Brett and VandeWalle, 1999; VandeWalle et al.,

1999). On the basis of these arguments, we expect a positive interaction effect between people's learning orientation and their perceived ability to become a successful entrepreneur on their entrepreneurial intention.

H₁: People's learning orientation moderates the relationship between their perceived ability to become a successful entrepreneur and their entrepreneurial intention, such that the relationship is amplified for a stronger learning orientation.

We further argue that people's learning orientation amplifies the relationship between the perceived attractiveness of becoming an entrepreneur and their entrepreneurial intention. People with a strong learning orientation not only have a higher propensity to develop new knowledge but also believe that their learning efforts can be instrumental for attaining desirable goals (Maurer et al., 2003; VandeWalle, 1997). That is, a strong learning orientation facilitates persistence in goal attainment (Brett and VandeWalle, 1999) and encourages more effective planning about how to execute personal goals (VandeWalle et al., 1999). Similarly, the notion of *self-regulated* learning reflects the idea that learning-oriented people are more motivated to integrate new knowledge into their current knowledge set to enhance their prospects for achieving particular outcomes that are desirable to them (Boekaerts, 1997)

Moreover, the role of learning orientation in reinforcing the effect of desirability considerations in people's career choices should be particularly salient in career situations marked by high levels of uncertainty and unexpected hurdles, such as entrepreneurship (Lent et al., 2004; Sarasvathy, 2008). Learning theory suggests that people's tendency to be continuously on the lookout for new knowledge increases their anticipation of finding solutions for any problems, even if those problems are unforeseen, on the path toward goal attainment (Honig, 2004; Piaget, 1950). In short, an inclination to develop new knowledge, as stimulated by a learning orientation, offers a resource that aspiring entrepreneurs can use to realize desirable goals through entrepreneurship (Brett and VandeWalle, 1999).

H₂: People's learning orientation moderates the relationship between the perceived attractiveness of becoming an entrepreneur and their entrepreneurial intention, such that the relationship is amplified for a stronger learning orientation.

The Moderating Role of Passion for Work

We further predict a positive moderating effect of people's passion for work on the relationship between their perceived ability to become a successful entrepreneur and their entrepreneurial intention. The extent to which people experience feelings of joy when engaging in work-related activities stimulates them not only to store task-relevant knowledge but also to focus their cognitive efforts toward knowledge retrieval when task demands require it (Cardon et al., 2009; Foo et al., 2009). Greater knowledge retrieval from the existing knowledge base can be instrumental for translating current abilities into enhanced task performance, as exemplified in research that demonstrates how workers with more harmonious passion are more immersed in their work-related activities and devote more psychic energy to them, which in turn leads to better work performance (Ho et al., 2011). Similarly, the application of current entrepreneurship-relevant abilities demands perseverance and commitment (Kuratko et al., 1997), which should be fueled by the passion and intensity with which people undertake work-related activities (Chen et al., 2009). Thus, the passion that someone feels about work in general can invigorate the instrumentality of his or her perceived entrepreneurship-relevant abilities for increasing entrepreneurial intentions, because this individual characteristic informs the cognitive efforts he or she is willing to invest to exploit the current knowledge set (Baum and Locke, 2004).

In addition, people who are passionate about work in general are more likely to experience positive emotions, such as joy and vitality, when undertaking work-related activities (Vallerand et al., 2003). Such emotions in turn increase people's cognitive abilities to channel their relevant knowledge set toward task-relevant activities (Frederickson, 1998), such as those anticipated in an entrepreneurial career. Thus, positive emotions derived from

passion for work can expand the repertoire of tools available to leverage existing skills and solve task-related problems (Ho et al., 2011). Finally, people with a strong passion for work are internally driven to go the extra mile to exploit their current knowledge set, and they experience positive feelings of accomplishment when they do so (Baum and Locke, 2004; Vallerand et al., 2003). On the basis of these arguments, we expect that the higher their passion for work, the greater the likelihood that people's perceived ability to become a successful entrepreneur will enhance their entrepreneurial intentions.

H₃: People's passion for work moderates the relationship between their perceived ability to become a successful entrepreneur and their entrepreneurial intention, such that the relationship is amplified for a stronger passion for work.

A person's passion for work also should amplify the relationship between the attractiveness of becoming an entrepreneur and entrepreneurial intentions. When people are passionate about work in general, they exhibit higher levels of commitment to achieving desirable work-related goals (Baum and Locke, 2004). In contrast with their less passionate counterparts, they are more prone to perform whatever actions are necessary to achieve desirable work-related goals (Button et al., 1996), and they direct high cognitive and mental energies toward achieving them (Mannheim et al., 2004).

Further, people who feel passionate about work in general tend to experience a close connection between their work and self-identity (Mannheim et al., 2004), which makes them more motivated to expend significant efforts and energy to reach outcomes that are attractive to them. That is, because both passion for work and the anticipation to find oneself in a desirable work situation are instrumental for how people define themselves (Ho et al., 2011), these two elements should mutually reinforce each other in the formation of entrepreneurial intention. Similarly, Cardon et al. (2009) note that feelings of passion enhance *existing* entrepreneurs' motivation to accomplish their personal goals, in that such passion affirms their salient role identities. In the context of this study, which focuses on entrepreneurial

intention formation *prior* to the actual start-up of a new business, a strong passion for work thus may function as a source of self-actualization that activates the urge to launching a career (as entrepreneur) that one perceives as highly attractive (Rothbard and Edwards, 2003). Thus, people with a strong passion for work should be more eager to consider starting a career that is seen as highly desirable.

H₄: People's passion for work moderates the relationship between the perceived attractiveness of becoming an entrepreneur and their entrepreneurial intention, such that the relationship is amplified for a stronger passion for work.

Research Method

Sample and Data Collection

Consistent with prior research that examines entrepreneurial intentions or behavior (Krueger et al., 2000; Levesque and Schade, 2005; Mueller and Thomas, 2001), we test our hypotheses with quantitative data collected from a university student sample.⁴ Although university students may not be representative of the general population, they are ideally suited to the study of entrepreneurial intentions, as opposed to actual entrepreneurial behaviors (Krueger et al., 2000), because (1) reflections on the outcomes they want to achieve in their future careers are likely top of mind, (2) they are relatively homogeneous with respect to their prior work experience, and (3) compared with a general adult sample, they are less likely to have actual entrepreneurial experience, a factor that might confound the level of entrepreneurial intentions. Also, very early career intentions can be a good predictor of career-related decisions over time (Trice, 1991), and findings from laboratory goal-setting studies involving students typically generalize to field settings involving adults (Locke, 1986).

⁴ Thus, our research design follows the positivist approach and empirically tests pre-theorized hypotheses. An interpretivist approach would have been an alternative, if the aim was to capture detailed information of how people may have different interpretations about what makes an entrepreneurial career feasible and desirable, and to consider the interactions between these interpretations and learning orientation and passion for work. Nevertheless, the positivist approach used seems warranted in light of the theoretical focus on the moderating roles of learning orientation and passion for work rather than on varying interpretations of feasibility and desirability with respect to entrepreneurship.

Therefore, we asked students from various academic backgrounds (e.g. business, humanities, sciences) at two Canadian universities to complete an online self-administered survey that assessed their career aspirations and personal characteristics. In one institution (“University 1”), the university’s career services office assisted in recruiting students and distributed flyers about the survey during a one-time job recruitment event attended by students from across the university. At the other institution (“University 2”), potential study participants consisted of students enrolled in any undergraduate course in organizational behavior or human resources, who were informed about the study through the school’s standard research participation system emails (one original email and one follow-up email) and verbal communication from their instructors. In both universities, prospective participants were told that though the study was about entrepreneurship as a career choice, they did *not* need to have a specific interest in entrepreneurship to participate.⁵

To pretest the survey and ensure that our questions were clear and understandable, we undertook informal interviews with three academics and three students (not included in the final sample) before the actual administration of the final version, whom we asked to point out ambiguous, vague, or unfamiliar terms. We incorporated their feedback to refine the measurement scales and thus improve the readability and relevance of the survey instrument (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). To minimize the possibility that the responses were subject to biases due to social desirability, acquiescence, or consistency with “assumed” research hypotheses, the respondents could complete the survey anonymously, were guaranteed complete confidentiality, were repeatedly assured in the survey that there were no right or wrong answers, and were asked to answer the questions as honestly as

⁵ The response rate equaled 35% at University 1 and 61% at University 2. Because the sample of University 1 included students from various backgrounds (business, humanities, sciences) and that of University 2 business students only, we ran separate regressions on the business- and non-business subsamples as a robustness check. The signs of the interaction terms are identical across the two groups and are in the same direction as for the total sample, though the significance levels decline somewhat due to the lower statistical power associated with regressions that use smaller samples.

possible (Podsakoff et al., 2003; Spector, 2006). The final sample consists of 946 respondents.⁶

Construct Measures

In Table 1, we list the focal measures used in our analyses, detailing their individual items, overall reliability estimates (Cronbach's alpha, composite reliability), and average variance extracted (AVE). The measures are drawn from prior literature and employ seven-point Likert scales.

Entrepreneurial intention. We measure entrepreneurial intention with two items drawn from Chen et al. (1998). Respondents indicated their level of agreement with statements assessing whether it was likely that they would start their own business soon or whether they had been preparing to start their own business (alpha = .88).

Perceived ability. We assess perceived ability of becoming a successful entrepreneur by adapting Bagozzi et al.'s (2003) measure of people's goal feasibility in decision making to the context of entrepreneurship. The items assess whether "it is highly feasible that I could start my own business" and "I feel certain that I would be able to start my own business if I wished to do so" (alpha = .83).

Perceived attractiveness. The measure of the perceived attractiveness of a career as entrepreneur is also adapted from Bagozzi et al. (2003). Respondents indicated whether they had a strong desire to start their own business, felt a strong urge to become self-employed, and had an overall wish to have their own business (alpha = .95).

Learning orientation. We measure learning orientation with VandeWalle's (1997) scale that assesses the extent to which people are prone to develop new skills. For example, respondents indicated their agreement with statements about the extent to which they like to

⁶ We excluded respondents who indicated they had previous experience as an entrepreneur.

take on challenging tasks from which they can learn or the extent to which they look for opportunities to develop new skills and knowledge ($\alpha = .89$).

Passion for work. Following prior studies (Baum and Locke, 2004), we measure passion for work with five items that reflect the extent to which people love work. Sample items assess the level of agreement with statements such as “I love to work hard” and “I derive most of my life satisfaction from working hard” ($\alpha = .87$).

Control variables. To account for alternative explanations for the variations in entrepreneurial intention, we control for respondents’ gender (dummy variable, female = 1), age (measured in years), education level (dummy variable, graduate student = 1), educational background (business, humanities, or sciences major, with the latter as the base case), whether they have been exposed to entrepreneurship in their curriculum (yes = 1), university affiliation (with “University 1” as the base case), and whether they have a close family member who is self-employed.

Reliability and Validity of Measures

Following Anderson and Gerbing (1988), we estimate a five-factor measurement model using AMOS 18, which includes the study’s major constructs. The confirmatory factor analysis (CFA) reveals factor loadings greater than .40, normalized residuals less than 2.58, and modification indices less than 3.84 (Anderson and Gerbing, 1988), in support of the adequacy of the scale items. We also note that this five-factor model fits the data well: $\chi^2_{(125)} = 496.66$, goodness-of-fit index (GFI) = .95, Tucker-Lewis index (TLI) = .97, confirmatory fit index (CFI) = .98, and root mean squared error of approximation (RMSEA) = .05. The significance of the factor loadings in the measurement model ($t > 2.0$; Gerbing and Anderson, 1988) and the magnitude of our AVE estimates (greater than .50, Bagozzi and Yi, 1988) provide evidence of the convergent validity of the measurement scales used (see Table 1 for more details). Discriminant validity between the constructs is also established, because the

AVE estimates of the constructs are greater than the squared correlations between the corresponding pairs of constructs (Fornell and Larcker, 1981). In addition, we find significant differences between the fit indices of the unconstrained and constrained models (Anderson and Gerbing, 1988) for *all* 10 pairs of constructs, which indicates that the unconstrained models (which assume discriminant validity) are superior.⁷ For example, significant differences are found for the models that include entrepreneurial intention and perceived ability ($\chi^2_{(1)} = 21.8, p < .001$), entrepreneurial intention and perceived attractiveness ($\Delta\chi^2_{(1)} = 50.5, p < .001$), perceived ability and perceived attractiveness ($\chi^2_{(1)} = 46.5, p < .001$), and learning orientation and passion for work ($\chi^2_{(1)} = 20.2, p < .001$).

To rule out the possibility of common method bias in our results, we undertake a CFA for a single-factor model and find a poorer fit with the data ($\Delta\chi^2(135) = 7,808.84$, GFI = .42, TLI = .41, CFI = .48, RMSEA = .23), significantly worse ($\Delta\chi^2(10) = 7,312.18, p < .001$) than the fit for the aforementioned five-factor model, which suggests that common method bias should not be a serious concern. Second, common method bias typically is less salient in studies using highly educated respondents and multi-item scales (Bergkvist and Rossiter 2007), as well as for studies that test for moderating rather than main effects because respondents cannot easily guess the former effects, which in turn decreases the likelihood of spurious findings (Brockner et al., 1997; Simons and Peterson, 2000). In all, these considerations thus alleviate concerns related to the use of common respondents in our study.

Results

The correlations and descriptive statistics for the study's variables appear in Table 2. We use moderated hierarchical regression analysis to test our hypotheses (Cohen and Cohen, 1983), with a mean-centering procedure for the independent and moderating variables to

⁷ To be precise, we assess the difference in fit between several pairs of models, whereby one model in each pair assumes a perfect correlation between the two constructs (i.e., a complete lack of discriminant validity) and the other model an absence of a correlation between the two (i.e., perfect discriminant validity). A significant chi-square difference indicates that the former model has a fit that is significantly worse than the latter model, and thus that the assumption of discriminant validity can be accepted (Anderson and Gerbing, 1988).

minimize multicollinearity (Aiken and West, 1991). The variance inflation factors are all lower than the critical value of 10, which implies that multicollinearity is not an issue in our analyses (Neter et al., 1996). In Table 3, we provide the regression results for several models. Model 1 contains only the control variables, and Model 2 adds the direct effects of perceived ability, perceived attractiveness, learning orientation, and passion for work. Models 3–6 add the four corresponding interaction terms, one at a time, to avoid multicollinearity problems and the masking of true interaction effects (Aiken and West, 1991; Cohen and Cohen, 1983), as recommended by prior entrepreneurship studies that test multiple interactions (e.g. De Clercq et al., 2010; Zahra and Hayton, 2008).

In terms of the control variables, we find that women express a lower entrepreneurial intention than men, and there are positive relationships between whether respondents have taken an entrepreneurship course or have exposure to a family role model and their entrepreneurial intentions (Model 1). We also observe a positive relationship between the perceived ability to become a successful entrepreneur ($\beta = .067, p < .05$) and the perceived attractiveness of becoming an entrepreneur ($\beta = .591, p < .001$). Further, we find a direct positive relationship between passion for work ($\beta = .107, p < .01$), but not learning orientation ($\beta = -.003, ns$), and entrepreneurial intention (Model 2).

Insert Tables 2 and 3 about here

Hypotheses 1 and 2 predict positive moderating effects of learning orientation. To test them, we add the corresponding interaction terms in Models 3–4. Each interaction term is positive and significant: We find positive interactions between people’s learning orientation and their perceived ability to become a successful entrepreneur ($\beta = .048, p < .05$, Model 3), and the perceived attractiveness of becoming an entrepreneur ($\beta = .058, p < .01$, Model 4). The moderating effects of passion for work (Hypotheses 3 and 4) mirror those found for

learning orientation. We find a positive interaction between people's passion for work and perceived ability ($\beta = .065, p < .001$, Model 5), and perceived attractiveness ($\beta = .067, p < .001$).

To clarify the nature of these significant interaction effects, we plot them in Figure 2A-B and Figures 3A-B, respectively. We find that the positive relationship between perceived ability and entrepreneurial intention is stronger at higher levels of learning orientation (Figure 2A) and passion for work (Figure 2B); similarly, the positive relationship between perceived attractiveness and entrepreneurial intention is stronger at higher levels of learning orientation (Figure 3A) and passion for work (Figure 3B).

Insert Figures 2A-B and 3A-B about here

Post-hoc analysis

In order to examine whether the interaction effects between the perceived attractiveness of becoming an entrepreneur and the two personal characteristics (learning orientation and passion for work) might work differently according to the extent to which people value extrinsic and intrinsic aspects in their future career (Naffziger et al., 1994; Schjoedt, 2009; Souitaris et al., 2007), we also assessed the importance that people attributed to “financial rewards” and “autonomy” in their future career.⁸ More particularly, we calculated the *three-way* interactions between perceived attractiveness, learning orientation (passion for work), and these two motivational aspects. Whereas we find no significant three-way interaction effects for the “importance of financial rewards”, we find (1) that the positive moderating effect of learning orientation on the perceived attractiveness–entrepreneurial intention relationship is stronger at higher levels of “importance of autonomy” ($\beta = .031, p < .05$), and similarly (2) that the positive moderating effect of passion for work on the

⁸ The importance of financial rewards was measured with two items: “economic opportunity” and “receiving compensation based on merit” ($\alpha = .70$) and autonomy with four items: “freedom,” “independence,” “be my own boss,” and “choose my own work tasks” ($\alpha = .85$).

perceived attractiveness–entrepreneurial intention relationship is also stronger at higher levels of “importance of autonomy” ($\beta = .024, p < .05$). Thus, these findings indicate that learning orientation and passion for work play particularly salient roles in triggering attractiveness considerations about entrepreneurship into actual entrepreneurial intention formation when intrinsic motivations (such as autonomy) underlie future career choices. The roles that these two personal characteristics play in leveraging perceived attractiveness into enhanced entrepreneurial intention appears to be immune, however, to the extrinsic motivation of financial rewards.

Discussion

The intention to start a new business represents a first critical step in the process of becoming an entrepreneur (Bird, 1988; Krueger et al., 2000; Lee et al., 2011). We investigate the role of two individual characteristics—people’s learning orientation and passion for work—that have received scant attention in the study of such entrepreneurial intention formation. This oversight is somewhat surprising, in light of the widely acclaimed importance of knowledge in the decision to start a venture (Davidsson and Honig, 2003; De Clercq and Arenius, 2006; Gorman et al., 1997). It is of further relevance given the characteristics impacting how people value and process knowledge when undertaking work-related tasks, and their propensity to continuously look for new knowledge to update the current knowledge set (learning orientation) and to intensively process work-related knowledge during task execution (passion for work). Although the formation of entrepreneurial intention may result from career-specific considerations with respect to feasibility and desirability (Fitzsimmons and Douglas, 2011; Krueger et al., 2000; Krueger and Bazal, 1994), limited research has considered how people’s individual characteristics—let alone their learning orientation and passion for work—also might influence the potency of such considerations to enhance the intention to start a new business (Franke and Lüthje,

2004; Lee et al., 2011; Lent et al., 1994). We argue that both characteristics provide a more dynamic perspective on the role of knowledge in entrepreneurial intention formation, because they reflect people's ongoing efforts when undertaking work-related activities and thus may have instrumental effects for alleviating concerns about the anticipated uncertainty of a future entrepreneurial career. Ultimately, they should invigorate the means by which feasibility and desirability considerations inform actual intention formation.

Our results indicate empirical support for these theoretical expectations. First, we find that the potency of people's *perceived ability* to become a successful entrepreneur for enhancing their entrepreneurial intention is stronger at higher levels of learning orientation (Figure 2A) and passion for work (Figure 3A) compared with lower levels. People who continuously look for new knowledge are better able to infuse their current knowledge set with new insights and thus may be more convinced that they can leverage their current entrepreneurship-relevant abilities to start a business. Similarly, people who are more passionate about devoting substantial efforts to work-related activities enjoy enhanced cognitive abilities to exploit their current knowledge base; they may also perceive stronger feelings of self-accomplishment and joy when they can leverage their current knowledge set in support of a career for which they believe they have appropriate capabilities.

Second, we find a similar pattern for the instrumentality of the perceived attractiveness of becoming an entrepreneur. The positive relationship between perceived attractiveness and entrepreneurial intention is stronger among people with a stronger learning orientation (Figure 2B) and passion for work (Figure 3B). Thus, learning orientation and passion for work—and the associated propensity to update the current skill set and intensively process work-related knowledge, respectively—amplify the potency of people's perceptions of entrepreneurship as a desirable career for enhancing their entrepreneurial intentions. The finding with respect to passion for work may suggest the possibility of a

positive feedback loop, in which prospective entrepreneurs “leverage” their passion to signal to themselves their anticipated success with regard to meeting an attractive career state.

Further research should investigate this proposition though.

In a post-hoc analysis, we further investigated whether the role of learning orientation and passion for work in leveraging attractiveness considerations toward enhancing entrepreneurial intention might in turn depend on the extent to which extrinsic or intrinsic motivations underlie people’s career choices. We find that the amplification effects of learning orientation and passion for work on the perceived attractiveness–entrepreneurial intention relationship is enhanced when the intrinsic goal of autonomy is valued to a greater extent, but these amplification effects are immune for the importance of the extrinsic career motivation of earning financial rewards. This lack of significant three-way interactions between learning orientation (passion for work), perceived attractiveness of becoming an entrepreneur, and the importance of financial rewards could indicate that people who have a strong willingness to learn new skills (or give their utmost to their work-related activities) devote limited attention to financial issues in their choice to reach their desirable goal of entrepreneurship. This interpretation resonates with previous research on the benefits of learning orientation and passion for work, particularly the notion that people who are motivated to invest significant energy in pursuing work-related goals for the sake of the learning challenge or joy that it brings—in our context, the undertaking of tasks that can lead to the “desirable goal” of entrepreneurship—gives limited weight to the financial outcomes associated with goal accomplishment (Dweck and Leggett, 1988; Ho et al., 2011).

Limitations, Future Research and Practical Implications

First, our focus has been on intentions rather than actual start-up decisions. Additional research could examine how the study’s focal individual characteristics (learning orientation and passion for work) influence the transition of intentions into actual career decisions

(Ajzen, 1991; 2001; Brännback et al., 2007). In this regard, our findings can inform future longitudinal applications of Ajzen's (1991) theory of planned behavior to entrepreneurship.

Implicit in our argument is that entrepreneurial intention automatically leads to actual new business creation, but it might not be necessarily the case (Franke and Lüthje, 2004).

People's learning orientation and passion for work instead could play instrumental roles in when and how entrepreneurial intentions translate into actual entrepreneurial behavior. For example, people continuously on the lookout for new knowledge or willing to go the extra mile when undertaking work-related activities might be more likely to persist even if their initial attempts to sell their business idea to others fail. Providers of entrepreneurial finance notably are in "the business of saying no" (Fried and Hisrich, 1994) and thus persistence among nascent entrepreneurs who go through repeated attempts to receive external funding may be greater when they are (1) willing to include the feedback and novel insights received from potential investors into their initial business idea and (2) relentless in their efforts.

Second, our post-hoc analysis provided some preliminary insight into how specific desirable career outcomes (i.e., financial rewards and autonomy) might play a role in the importance of learning orientation and passion for work for translating career-specific motivations into entrepreneurial intention. Future research could consider additional relevant outcomes, such as challenge or self-realization (Souitaris et al., 2007), and include these factors into a more comprehensive model of career intention formation, including careers as entrepreneur versus manager in a corporate setting. For example, such research could investigate whether the relative "insensitivity" of learning-oriented and passionate people to include financial issues in their considerations to launch a "desirable" career as entrepreneur, as found in our post-hoc analysis, might also suggest that people who are prone to learn new skills or work passionately believe that gaining financial rewards can be as easily accomplished in work settings *different* from entrepreneurship. In such work settings strong

learning orientation and passion for work may perhaps offer opportunities for direct comparisons with peers (who are less learning-oriented or less passionate about work) and thus increased possibilities that employers financially reward them for their demonstrated willingness to learn new things or work passionately.

Third, our study has focused on the emergence of particular intentions early in a person's career trajectory (Fitzsimmons & Douglas, 2011) rather than offering a broader theory of lifelong career intentions. Accordingly, we tested our hypotheses with a student sample, which may not be representative of the entire population. It would be beneficial to test the external validity of our findings across a more diverse set of subjects and thus investigate, for example, whether and how the hypothesized effects might work differently as people move along different stages of their career trajectory.

The results also offer several important practical implications. Our consideration of the interplay between people's feasibility and desirability considerations and characteristics that tap into how they value and process knowledge reveals that these two sets of factors should be considered simultaneously to understand entrepreneurial intention formation. Entrepreneurship programs should recognize that career-specific motivations, the willingness to update current knowledge, and a general passion for work all go hand in hand and can have synergistic effects on the development of the interest among young adults to start their own business. Further, educators should be clear that a willingness to update one's knowledge base continuously or devote maximum effort to work-related activities may only be a minimum entry condition for a career fraught with challenges, hurdles, and possible failure. Having a learning orientation or being highly passionate about work may in fact be more easily or rapidly rewarded in a corporate context, where work-related behaviors are often directly compared with peers'. In this regard, our post-hoc analysis indicated that a strong learning orientation and passion for work may be most useful and stimulatory among

those who see entrepreneurship as a desirable career *and* emphasize intrinsic goals (e.g. pursuit of autonomy) in their future career, rather than looking to reach extrinsic goals.

Further, people's learning orientation and passion for work are not set in stone (Ames and Archer, 1988; Burke and Fiksenbaum, 2009; Porter and Tansky, 1999), and their manifestation may depend on situational circumstances, such as prior task-related experiences or external requirements for particular tasks (Button et al., 1996; Markus and Wurf, 1987). Accordingly, the potency of feasibility- and desirability-related considerations to enhance entrepreneurial intentions may be controlled partially by educators or other stakeholders who wish to increase the number of students who engage in actual start-up endeavors. Some attitudes and behaviors associated with a strong learning orientation could be promoted by exposing students to the joys of undertaking challenging projects or providing them with the skills and abilities to bring projects to a successful end (Brett and VandeWalle, 1999; Souitaris et al., 2007). Practical experiences, as well as a flexible learning environment along with more widely expressed learning goals, may both increase learning orientation, as well as enhance the interests of individual students creating a virtuous cycle. Similarly, educators can increase the likelihood of their students' exhibiting a strong passion for work in the context of entrepreneurship by demonstrating that entrepreneurial opportunities exist in a wide array of areas and disciplines, encouraging students to consider what areas and disciplines they are most interested in, and then developing exercises that involve exploration of entrepreneurial opportunities in those identified areas of interest.

Traditional pedagogy is frequently in contrast to the needs of entrepreneurial education. Academic learning typically consists of presenting information in a consistent and predictable manner. Students review, digest, and repeat previously dictated solutions to specific abstract problems, and demonstrate competence during examinations. While these techniques are well adapted for teaching foundation material, such as providing tools that

assist students in analytical decision making, this method of learning is ill suited to the complex and dynamic problems typically faced by contemporary entrepreneurs. Thus, developing more experiential “open ended” learning opportunities may be a useful way of enhancing entrepreneurial interest, and eventual success. Such a learning environment has considerable implications for traditional educational programs, which focus on testing and rewarding replication, rather than adaptation. New assessment measures may therefore be necessary to accommodate the needs of entrepreneurship education.

A passion for work could be stimulated by explicating the possible synergistic effects between work and leisure activities, such that work-related activities come to represent sources of personal freedom, individual growth, challenge, and excitement (Kuratko et al., 1997). Students also might be exposed to inspiring role models who communicate their passion for entrepreneurship (Cardon et al., 2005, 2009; Scherer et al., 1989). Thus, educators could create specific conditions in which students’ learning orientation and passion for work are “activated” and consider how these manipulations might impact the intention to consider entrepreneurship as a career option, particularly among those people who perceive they have the capabilities to become a successful entrepreneur or for whom entrepreneurship seems a particularly attractive career option.

Overall we believe that this study should be of interest to those who research, teach, and support entrepreneurship, because it explicates the interplay between the underexplored concepts of learning orientation and passion for work with people’s entrepreneurship-specific motivations in the formation of entrepreneurial intention. We have highlighted how these individual characteristics, which have implications for how people value and process knowledge, affect the potency of feasibility and desirability considerations to enhance entrepreneurial intention. They present an important and as yet largely untapped point of access for those interested in promoting and enhancing entrepreneurship. We hope then that

this study can serve as a precursor of further research into the boundary conditions that influence the effectiveness of specific career considerations for enhancing entrepreneurship.

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Figure 1. Conceptual Model

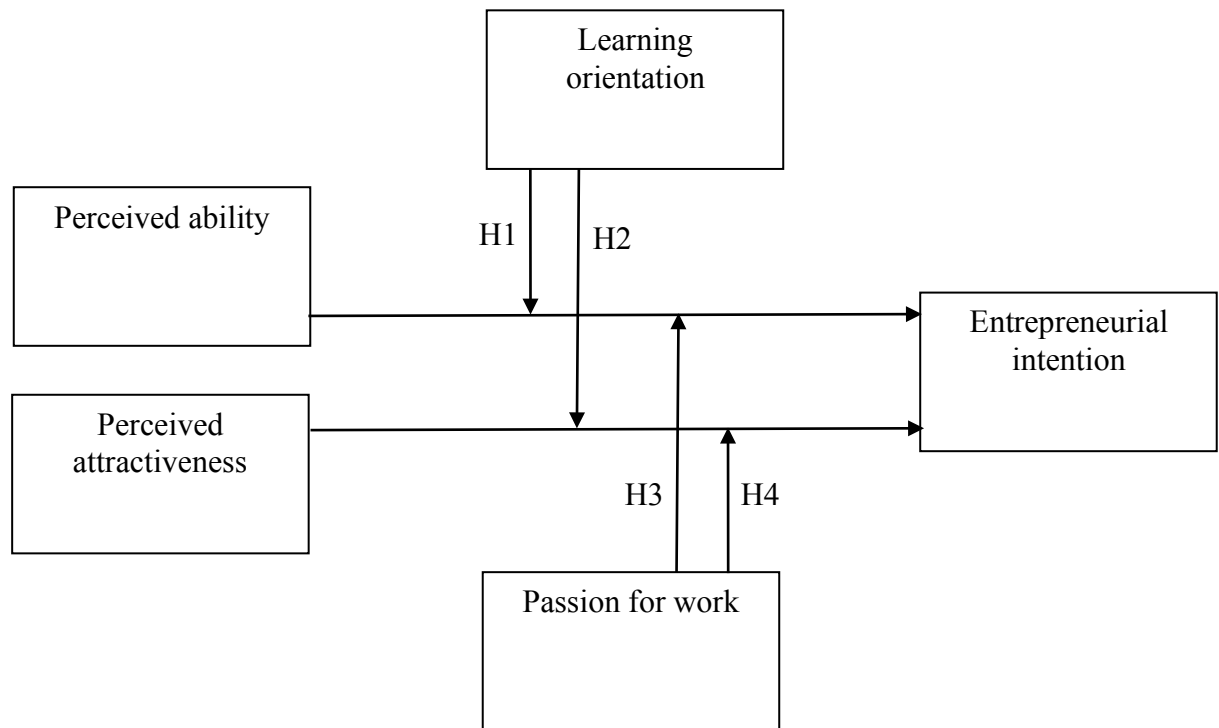


Figure 2A. Moderating Effect of Learning Orientation on the Perceived Ability–Entrepreneurial Intention Relationship

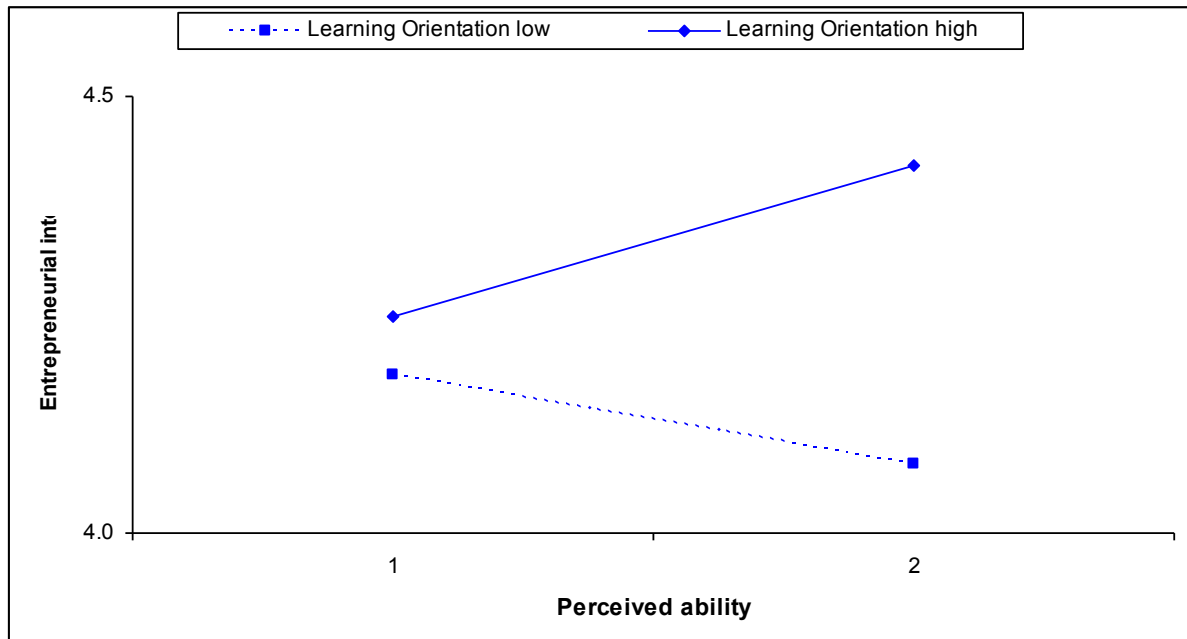


Figure 2B. Moderating Effect of Learning Orientation on the Perceived Attractiveness–Entrepreneurial Intention Relationship

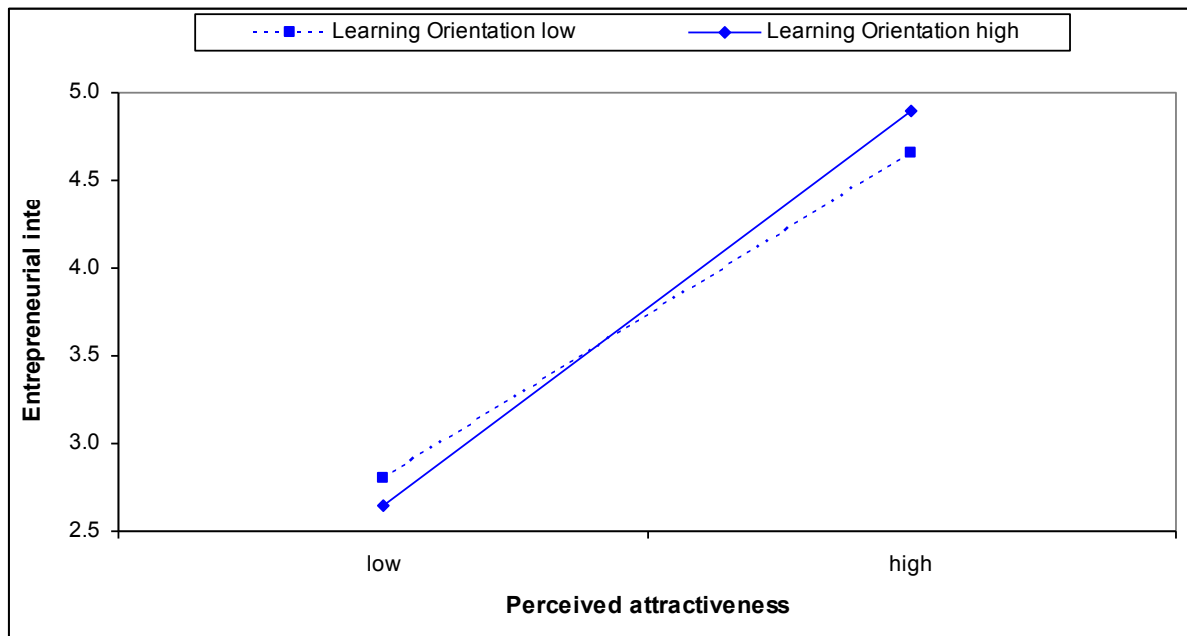


Figure 3A. Moderating Effect of Passion for Work on the Perceived Ability–Entrepreneurial Intention Relationship



Figure 3B. Moderating Effect of Passion for Work on the Perceived Attractiveness–Entrepreneurial Intention Relationship

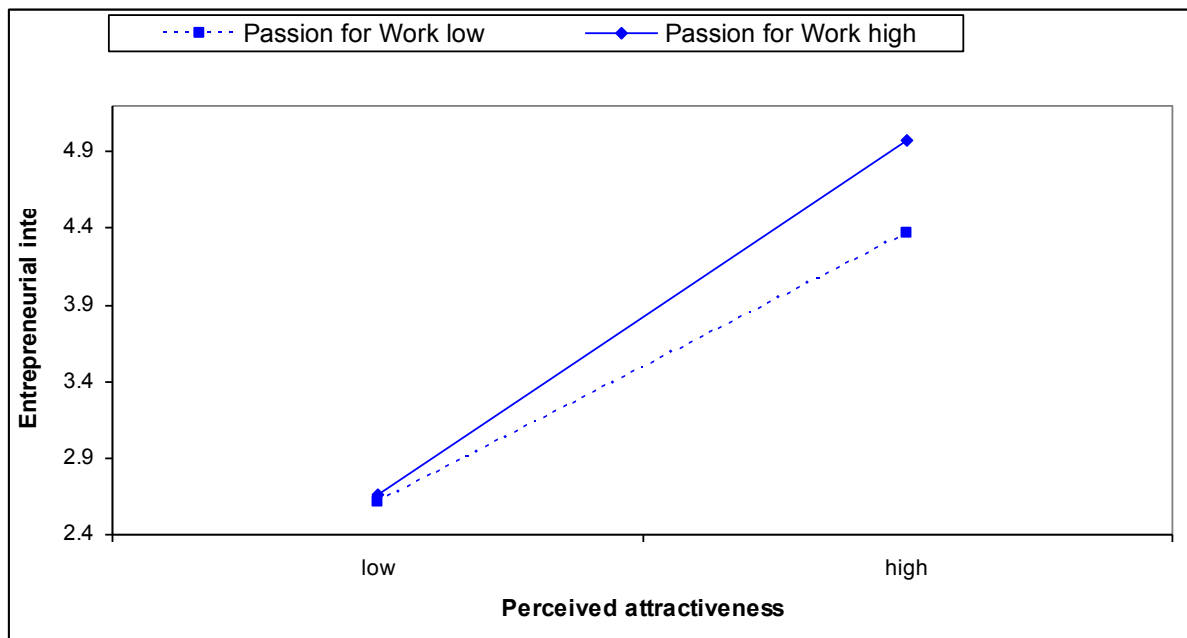


Table 1. Constructs and Measurement Items

	Factor Loading	t-Value
Entrepreneurial intention ($\alpha = .88$; CR = .89; AVE = .80)		
I have been preparing to start my own business.	.900 ^a	-
I am likely to start my own business soon.	.885	37.28
Perceived ability ($\alpha = .83$; CR = .86; AVE = .76)		
It is highly feasible that I could start my own business.	.983	27.01
I feel certain that I would be able to start my own business if I wished to do so.	.739 ^a	-
Perceived attractiveness ($\alpha = .95$; CR = .96; AVE = .88)		
I have a strong desire to start my own business.	.958	60.91
I feel a strong urge to become self-employed.	.934	56.09
My overall wish is to have my own business.	.922 ^a	-
Learning orientation ($\alpha = .89$; CR = .90; AVE = .62)		
I often read materials (articles, Internet, books, etc) to improve my abilities.	.585	18.60
I like to take on a challenging task that I can learn a lot from.	.859	27.25
I often look for opportunities to develop new skills and knowledge.	.829	26.34
I enjoy challenging and difficult tasks through which I can learn new skills.	.889	28.15
For me, developing my abilities is important enough to take risks.	.792	25.18
I prefer to work in situations that require a high level of ability and talent.	.713 ^a	-
Passion for work ($\alpha = .87$; CR = .87; AVE = .59)		
I derive most of my life satisfaction from working hard.	.734	16.01
I love to work hard.	.849	17.05
I look forward to returning to work when I am away from it.	.899	17.38
I accomplish a lot because I love to work hard.	.501 ^a	-
Sometimes I wish that I could be working harder when I am not.	.585	18.60

^a Initial loading was fixed to 1 to set the scale of the construct.

Notes: CR = construct reliability; AVE = Average Variance Extracted.

Table 2. Correlation Matrix (n = 946)

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Entrepreneurial intention	2.829	1.596													
2. Perceived ability	4.036	1.474	.524												
3. Perceived attractiveness	3.638	1.748	.726	.664											
4. Learning orientation	5.198	.975	.184	.208	.213										
5. Passion for work	4.870	1.171	.219	.155	.211	.494									
6. Gender	.616	.487	-.215	-.239	-.242	.047	.144								
7. Age	21.030	2.160	.047	-.034	.070	.158	.06	.039							
8. Education level	.067	.249	.038	-.038	.008	.019	.023	.089	.403						
9. Business major	.580	.494	.158	.164	.175	-.140	-.119	-.311	-.113	.012					
1. Humanities major	.330	.470	-.170	-.185	-.197	.078	.068	.335	.06	-.006	-.823				
11. Entrepreneurship in curriculum	1.690	.461	-.134	-.107	-.136	-.061	-.056	.134	-.110	-.034	-.170	.108			
12. University affiliation	.280	.450	.075	.094	.083	-.023	-.011	-.142	-.256	-.167	.480	-.388	.146		
13. Family role model	.626	.484	.124	.103	.105	.068	.110	.067	-.03	.014	-.006	-.013	-.092	-.011	

Note: Correlations above |.067| at $p < .05$

Table 3. Regression Results (Dependent Variable: Entrepreneurial Intention) (n = 946)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Gender (female = 1)	-.595***	-.170*	-.164*	-.171*	-.172*	-.179*
Age	.037	-.010	-.011	-.013	-.011	-.015
Education level (graduate student = 1)	.234	.272 ⁺	.279 ⁺	.296 ⁺	.277 ⁺	.303*
Business major ^a	.000	.091	.096	.099	.138	.135
Humanities major	-.278	.039	.040	.042	.060	.043
Entrepreneurship in curriculum	.306**	-.075	-.075	-.071	-.074	-.058
University affiliation ^b	.176	.024	.026	.017	.007	-.001
Family role model	.426***	.139 ⁺	.137 ⁺	.131 ⁺	.140 ⁺	.127 ⁺
Perceived ability		.067*	.069*	.066*	.068*	.063*
Perceived attractiveness		.591***	.586***	.587***	.581***	.583***
Learning orientation		-.003	.018	.022	.015	.006
Passion for work		.107**	.113**	.110**	.131***	.138***
H1: Perceived ability × Learning orientation			.048*			
H2: Perceived attractiveness × Learning orientation				.058**		
H3: Perceived ability × Passion for work					.065***	
H4: Perceived attractiveness × Passion for work						.067***
F-value	11.303***	92.096***	85.757***	86.470***	87.032***	87.866***
R-square	.088	.543	.544	.546	.548	.550

Notes: $p < .001$; $p < .01$; $p < .05$; ⁺ $p < .10$ (two-tailed); ^a Base case = Science major; ^b Base case = "University 1"