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A longitudinal analysis of the influence of career motivations on entrepreneurial intention and action

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Abstract

The impact of career motivations on entrepreneurial intention and action remains in need of being investigated conjointly. Using a large sample and follow-up data collected five years later, we investigate their influence on the entrepreneurial involvement of young adults, from the expression of an intention to entrepreneurial action. We show that only the search for job security seems to have a persistent effect throughout the process. In addition, autonomy is associated with the formation of intention, while wanting to manage full processes is related to actual start-up participation. We discuss the theoretical and practical implications.

Résumé

L'impact des motivations professionnelles sur l'intention et l'action entrepreneuriales restent à étudier conjointement. En nous basant sur un large échantillon interrogé à cinq ans

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d'intervalle, nous analysons l'influence de ces motivations sur l'implication entrepreneuriale de jeunes adultes, de l'expression d'une intention jusqu'à l'action entrepreneuriale. Nous montrons que seule la recherche de sécurité de l'emploi semble avoir un effet persistant tout au long du processus. De plus, l'autonomie est associée à la formation de l'intention, alors que la volonté de gérer l'intégralité des processus est liée à la participation entrepreneuriale. Nous discutons les implications théoriques et pratiques de ces résultats.

Keywords: career motivations, regulatory focus, entrepreneurial intention, start-up behaviour, longitudinal analysis, entrepreneurial process

Mots clés : motivations professionnelles, focus régulateur, intention entrepreneuriale, start-up, analyse longitudinale, processus entrepreneurial

Introduction

The analysis of the motivations of individuals making career decisions is crucial for entrepreneurship theory (Carter, Gartner, Shaver, & Gatewood, 2003; Shane, Locke, & Collins, 2003), as they are essential for people to form entrepreneurial intentions and, subsequently, to start companies (Ajzen & Gilbert Cote, 2008; Renko, Kroeck, & Bullough, 2012). For some time, the focus of entrepreneurship research shifted away from these motivations to focus on intention models (Carsrud & Brännback, 2011). These models consider motivations as distal influences of intention, whose effect is mediated by perceived desirability in Shapero and Sokol's (1982) Entrepreneurial Event Formation Model (EEM) and by attitude toward a behaviour in Ajzen's (1991) Theory of Planned Behaviour (TPB).

Still, research focusing specifically on motivations and their potential influence on the transition from intention to entrepreneurial behaviour has recently been identified as an important research area (Fayolle, Liñán, & Moriano, 2014; Renko et al., 2012; Stephan, Hart,

& Drews, 2015). In this context, Higgins's (1997) Regulatory Focus Theory (RFT) could shed some interesting light on the motivations driving entrepreneurs throughout their entrepreneurial journeys (Brockner, Higgins, & Low, 2004). This theory suggests that individuals consider two major decision factors to form their choices: people with a so-called promotion focus will be motivated by accomplishments, thereby seeking to achieve positive outcomes, while those with a prevention focus will be bearing in mind safety considerations, thereby seeking to avoid negative outcomes (Higgins, 1997). These regulatory foci are intrinsically linked to motivations (Fischer, Mauer, & Brettel, 2018). While both foci have virtues, they may play different roles throughout the entrepreneurial process and it is expected that too much of a prevention focus could hinder entrepreneurial outcomes (Brockner et al., 2004).

Current research on entrepreneurial motivations faces at least two problems. The first one is the lack of prospective studies reflecting the longitudinal nature of entrepreneurial journeys, thereby acknowledging the time delays inherent to entrepreneurial processes (Carsrud & Brännback, 2011; Carter et al., 2003). In fact, individuals' underlying career motivations are usually analyzed using cross-sectional data (Shirokova, Osiyevskyy, & Bogatyreva, 2016). A second problem is that, despite a few exceptions (Delanoë-Gueguen & Fayolle, 2018; Delanoë, 2013; Liñán & Rodríguez-Cohard, 2015; Shinnar, Hsu, Powell, & Zhou, 2017; Van Gelderen, Kautonen, & Fink, 2015), most studies focus on the formation of intention, but hardly ever investigate actual entrepreneurial realization (Fayolle & Liñán, 2014; Schlaegel & Koenig, 2014). Thus, while it has long been proposed that varying motivations may be influencing each stage and the transition between the entrepreneurial process stages differently (Shane et al., 2003), their impact on actual involvement in entrepreneurial endeavours remains in need of being investigated in a consistent manner (Stephan et al., 2015). This is all the more important as these motivations have been shown to influence the growth subsequently achieved by the ventures (Cassar, 2007).

In this paper, we therefore address the following research question: how do career motivations impact, first, the formation of entrepreneurial intention and, second, the subsequent involvement in entrepreneurial undertakings? We rely on the seminal work by Kolvereid (1996) as a starting point for the motivational beliefs behind career choices. Our objective of collecting prospective data including individuals who may or may not be interested in entrepreneurial careers (Carter et al., 2003; Krueger, Reilly, & Carsrud, 2000) leads us to first identify a sample of upper-division students (Krueger et al., 2000), surveyed again five years later, once they had entered professional life. Based on a parsimonious career motivation scale representing five dimensions, we analyze how these dimensions are related to the entrepreneurial intention and the actual entrepreneurial behaviour of individuals in the five years elapsed. Using Structural Equation Modelling (SEM), we highlight the presence of complex relationships between the different motivations, intention, and actual entrepreneurial behaviour, throughout the entrepreneurial process. We show that only the search for job security, a prevention-related motivation, has a persistent and hindering effect throughout the process. However, the search for autonomy and the willingness to manage the whole process, both promotion-related motivations, contribute respectively to the formation of entrepreneurial intention and the concretization of entrepreneurial outcomes. We know of very few studies adopting this longitudinal approach successfully (Liñán & Rodríguez-Cohard, 2015; Shinnar et al., 2017), as earlier attempts to incorporate entrepreneurial behaviour follow-up data for individuals initially surveyed during their studies had been unsuccessful, possibly due to limited time intervals (Souitaris, Zerbinati, & Al-Laham, 2007).

Our study offers several contributions. From a theoretical standpoint, our analysis enables us to highlight the relative importance of different career motivations at two key early stages of the entrepreneurial process, namely the formation of entrepreneurial intention, but also the actual subsequent participation in an entrepreneurial project. It also serves to inform Regulatory

Focus Theory in entrepreneurial contexts (Brockner et al., 2004; Higgins, 1997) by showing the role of specific promotion- and prevention-related career motivations in respectively fostering and hindering early entrepreneurial developments. For entrepreneurship scholars, our analysis relies on a parsimonious attitude scale, adapted from Kolvereid's (1996) original proposition, which can be used in future entrepreneurship studies to achieve increased homogeneity and comparability. From a methodological standpoint, the use of a large initial sample and a follow-up study after five years ensures the robustness of our proposition. Last but not least, from a practical standpoint, we identify what motivations are important for policy makers, educators and start-up advisors seeking to encourage actual entrepreneurial involvement rather than just intention.

In the following section, we present our literature review starting with the presentation of career motivations in entrepreneurial contexts, their theoretical groundings within the Theory of Planned Behaviour (Ajzen, 1991), and their relationship with Regulatory Focus Theory (Brockner et al., 2004; Higgins, 1997). This leads us to present our research model. We then turn to our methodology and the presentation of our data analysis. After that, we discuss our results, and conclude by showing their limitations and opportunities for future research.

Theoretical Background and Hypothesis Development

Intentionality has long been a characteristic attributed to entrepreneurial behaviour (Carter et al., 2003; Krueger, 2009), as the choice of an entrepreneurial path goes through various phases of increasing engagement, from the formation of an entrepreneurial intention to actual entrepreneurial behaviour (Carsrud & Brännback, 2011; Delanoë-Gueguen & Fayolle, 2018). In this context, scholars have been seeking to understand which career motivations lead some individuals rather than others to enter and progress through entrepreneurial journeys.

Career Motivations and Entrepreneurial Career Paths

Two complementary perspectives may be used to understand how career motivations influence individuals' choices of career path: the Theory of Planned Behaviour, or TPB (Ajzen, 1991), and Regulatory Focus Theory, or RFT (Higgins, 1997).

The TPB, on the one hand, posits that in the case of complex behaviours, as is usually considered to be the case for entrepreneurship, action will be preceded by the formation of an intention, and that this intention itself will be influenced by an attitude toward that behaviour, social norms and perceived behavioural control (Ajzen, 1991). In this theory, attitudes illustrate the “dispositions to respond with some degree of favorableness or unfavorableness to a psychological object” (Ajzen & Gilbert Cote, 2008, p. 289). Their underlying determinants are behavioural beliefs or “beliefs about a behavior’s consequences” (Ajzen & Gilbert Cote, 2008, p. 302), which are closely related to motivations. In entrepreneurial contexts, career motivations have been related to perceived attractiveness (Boissin, Chollet, & Emin, 2009; De Clercq, Honig, & Martin, 2013; Souitaris et al., 2007) or perceived desirability (Fitzsimmons & Douglas, 2011; Krueger et al., 2000; Nasurdin, Ahmad, & Lin, 2009; Segal, Borgia, & Schoenfeld, 2005), and hence an intention to engage in entrepreneurial paths. In fact, individuals favour activities that they expect will enable them to attain positively valued outcomes or avoid negatively valued ones (Vroom, 2005). In this context, the work motivations of individuals represent the valence or importance they attribute to various work-related outcomes (Manolova, Brush, & Edelman, 2008). They feed their attitude toward entrepreneurship and, in turn, their intention to embrace an entrepreneurial path or not. Entrepreneurial valence is clearly a multi-dimensional construct (Renko et al., 2012), as illustrated in the variety of career motivations identified in the literature.

RFT, on the other hand, focuses specifically on the motivational drivers of individuals and the related self-regulatory mechanisms that they rely on when pursuing specific goals (Fischer et al., 2018). It proposes that these drivers may be aimed either at getting pleasure or avoiding pain. In work-related contexts, the aims may be to reach some positive accomplishments, in the case of individuals exhibiting a promotion focus, or to prevent losses or negative outcomes, for individuals relying on a prevention focus (Higgins, 1997). The presence of a promotion and a prevention focus have been shown to respectively motivate and demotivate students to consider an entrepreneurial career (Jaskiewicz, Luchak, Oh, & Chlosta, 2016). Further along in the process, when developing a new venture project, alternatively emphasizing promotion and prevention aspects appears important for moving forward (Brockner et al., 2004; Fischer et al., 2018; Hmieleski & Baron, 2008). For example, it has been proposed that a promotion focus will be most useful in the idea generation phase, while a prevention focus should help screen these ideas in a disciplined manner (Brockner et al., 2004). In addition, while in stable environments entrepreneurs' promotion and prevention focuses do not seem to impact firms' performance levels, in the case of dynamic environments requiring a constant re-assessment and repositioning of the venture, a promotion focus, as opposed to a prevention focus, appears to enhance performance (Hmieleski & Baron, 2008). Finally, a prevention focus has been shown to reduce the likelihood of becoming a serial entrepreneur (Simmons, Carr, Hsu, & Shu, 2016).

Entrepreneurial Versus Employee Career Motivations

Because of their acknowledged importance for the development of entrepreneurial endeavours, the career motivations of entrepreneurs have attracted attention and been the topic of important studies (Carter et al., 2003; Douglas & Shepherd, 2002; Manolova et al., 2008; Segal et al., 2005; Shane et al., 2003; Stephan et al., 2015).

In recent years, many US scholars have been relying on data collected via the Panel Study of Entrepreneurial Dynamics (PSED I and II), which includes data regarding six career reasons: innovation, independence, recognition, roles, financial success, and self-realization (Carter et al., 2003; Cassar, 2007; Manolova et al., 2008). In other geographic areas, where PSED data are not available, research has been favouring the use of Kolvereid's (1996) proposition (Boissin et al., 2009; Fayolle & Gailly, 2015; Kautonen, van Gelderen, & Tornikoski, 2013; McNally, Martin, Honig, Bergmann, & Piperopoulos, 2016; Souitaris et al., 2007) or the use of ad-hoc scales (Aziz, Friedman, & Sayfullin, 2012; Giacomini et al., 2011; Pruett, Shinnar, Toney, Llopis, & Fox, 2009; Raposo, do Paço, & Ferreira, 2008). Carter et al. (2003) point out Kolvereid's (1996) research as a ground-setting study on career motivations, including a comparison with non-entrepreneurs. Finally, some scholars have chosen to focus on the influence of individual dimensions taken separately or in combination. Examples include: work effort (Douglas & Shepherd, 2002); autonomy (Van Gelderen & Jansen, 2006); a need for achievement, wealth, and autonomy (Engle et al., 2010); a need for achievement, locus of control, and risk propensity (Frank, Lueger, & Korunka, 2007); or independence and innovation (Zellweger, Sieger, & Halter, 2011). Overall, in a review, Stephan et al. (2015) identified seven specific motivations for entrepreneurship: achievement, challenge, and learning; independence and autonomy; income security and financial success; recognition and status; family and roles; dissatisfaction; and community and social motivations. They also highlighted the fact that few studies in their sample included students. Yet, student-based studies exist, as illustrated by the list of articles included in our Table 1, which presents 29 studies interested in career motivations. Among these, 19 were conducted with student samples. In addition, an overwhelming majority of these studies focus on the intention stage (Table 1).

[Insert Table 1]

The impact of motivations on entrepreneurial career choice can be analyzed in comparison with other professional alternatives (Kolvereid, 1996). This latter approach includes a notion of opportunity costs (Cassar, 2006; Gundry & Welsch, 2001) by considering a salaried and an entrepreneurial career as mutually exclusive choices. Studies based on this bipolar approach involve identifying motivations either fostering or inhibiting entrepreneurial intention. This relates to the foundation of Vroom's (2005) expectancy theory, suggesting that individuals will seek activities expected to take them closer to positively valent outcomes and/or away from negatively valent ones.

Within this approach, we consider that entrepreneurship is one career option among others, the choice of which will be impacted by the underlying beliefs and motivations guiding individuals in their evaluation of the career options facing them (Kolvereid, 1996). This implies that we expect to identify professional motives that individuals view as either compatible or incompatible with the pursuit of a start-up project, and either attracting them to or preventing them from considering an entrepreneurial career (Vroom, 2005). In addition, since the transformation of intention into action is not automatic and involves several hurdles (Van Gelderen et al., 2015), we aim to assess the effect of different motivations on actual entrepreneurial behaviour, rather than just on intention.

Hypothesis Development: Promotion- and Prevention-Related Career Motivations

Among the variety of career motivations identified in the literature (see Table 1), we identify five motivations derived from Kolvereid's (1996) seminal work that we expect to have a significant impact: autonomy, economic reward, managing the whole process, avoiding job responsibility, and seeking job security. While Kolvereid (1996) and some other scholars

(Kautonen et al., 2013) used this series of motivation to compute an overall index, we are interested here in investigating the specific role of each motivation.

From a regulatory focus standpoint (Higgins, 1997), autonomy, economic reward, and managing the whole process may be viewed as promotion-related, with individuals seeking positive career rewards, while avoiding job responsibility and seeking job security relate to a prevention stance, aimed at maintaining one's safety (Jaskiewicz et al., 2016).

Autonomy has long been associated positively with the choice of an entrepreneurial career (Van Gelderen & Jansen, 2006). This motive is related to the quest for independence pursued by business owners (Boissin et al., 2009; Carter et al., 2003; Douglas & Shepherd, 2002; Giacomini et al., 2011; Pruett et al., 2009; Segal et al., 2005), and individuals' desire to be in control of their decisions and organization both at work and in their personal life (Carter et al., 2003; Stephan et al., 2015). In fact, this motivation regularly appears as the major element driving individuals toward an entrepreneurial career (Cassar, 2007).

The desire to manage the whole process is also associated with entrepreneurial career choices (Kolvereid, 1996). This motivation draws on one's willingness to have full control of one's work life (Stephan et al., 2015). However, it also entails another aspect, which is the need the entrepreneur has to be a so-called jack-of-all-trades, rather than a specialist focusing on a single job function (Lazear, 2005). In other words, entrepreneurs want to control all the steps from the idea stage to the actual realization of their project and hence will be generalists capable of being involved in all the stages of business creation.

Finally, the economic reward motivation relates to one's desire to achieve financial success (Manolova et al., 2008) and to attain financial security (Carter et al., 2003). This motivation has been shown to positively differentiate students attracted to entrepreneurship from those less inclined (Raposo et al., 2008), and to be associated with entrepreneurial career paths (Kautonen et al., 2013). While some scholars failed to find a difference in this motivation

between nascent entrepreneurs and non-entrepreneurs (Carter et al., 2003), others emphasized its importance in explaining subsequent venture growth (Cassar, 2007).

From an RFT standpoint, individuals with a promotion focus will look to enter into behaviours which they believe will enable them to hit and avoid missing interesting opportunities (Crowe & Higgins, 1997). They will seek to grow and advance to better states (Higgins & Cornwell, 2016) and will tend to have an eager approach to opportunity evaluation (Bryant, 2007). As a result, a promotion focus has been positively associated with entrepreneurial opportunity recognition (Tumasjan & Braun, 2012). Promotion-driven individuals will also likely show more stamina and persistence when facing difficulties, which are known to pave entrepreneurial paths (Crowe & Higgins, 1997; Tumasjan & Braun, 2012), as well as viewing business growth through a positive lens (Prasastyoga, Leeuwen, & Harinck, 2017). Hence, motivations related to a promotion focus are expected to be associated not only with the formation of entrepreneurial intention, but also with the development of actual businesses. This represents our first hypotheses.

H1a: Promotion-related motivations of having autonomy, managing the whole process, and seeking economic rewards are positively associated with entrepreneurial intention.

H1b: Promotion-related motivations of having autonomy, managing the whole process, and seeking economic rewards are positively associated with entrepreneurial behaviour.

On the other hand, considering prevention-related motivations, Kautonen et al. (2013) identify avoiding job responsibility and seeking job security as being negatively associated with entrepreneurial career choices. Avoiding job responsibility has been related to the willingness to limit one's commitment to work (Kautonen et al., 2013). While RFT advances being able to

meet one's overall responsibilities as a prevention-related aspect (Higgins, 1997), here the emphasis is on avoiding finding oneself in a situation where the consequences of job responsibilities, that is, accountability, could bring about negative consequences, such as losing one's venture. Hence, limiting one's decision power and favouring simple jobs should be associated with preference for an employee career. Finally, job security relates directly to fulfilling safety needs (Higgins, 1997). Prevention-focused individuals want to limit their risk (Hmieleski & Baron, 2008) and choosing a career path that lowers their risk of failure, such as finding themselves out of employment, is therefore important. Entrepreneurial careers are seen as more volatile and risky (Douglas & Shepherd, 2002), while employee careers seem more predictable, although their associated financial rewards may be lower, and thus respond to prevention-focused individuals' safety needs. In addition, prevention-focused individuals are likely to be more vigilant in the face of pursuing goals that may ultimately lead to losses (Higgins & Cornwell, 2016), and may decide to stop before any losses are incurred (Tumasjan & Braun, 2012). They will be more demanding before acting on opportunities, for example by setting higher screening criteria (Tumasjan & Braun, 2012). Hence, we expect such prevention-related motivations to negatively impact not only the formation of entrepreneurial intention, but also actual entrepreneurial endeavours. This represents our second set of hypotheses.

H2a: Prevention-related motivations of avoiding job responsibility and seeking job security are negatively associated with entrepreneurial intention.

H2b: Prevention-related motivations of avoiding job responsibility and seeking job security are negatively associated with entrepreneurial behaviour.

Motivations may also be impacting the strength of the intention–behaviour link; that is, act as “moderators of their own indirect effect” (Hayes, 2013, p. 332). Specifically, individuals with promotion-related work motivations (autonomy, managing the whole process, and economic rewards) will be more inclined to act on their entrepreneurial intentions (Lieberman, Idson, Camacho, & Higgins, 1999). These motivations do not only lead them to exhibit a higher intention, they also reinforce their likelihood of acting on this intention. This is because positively-valent motivations increase the probability of developing action plans to implement the entrepreneurial intention (Gollwitzer, 1996). Additionally, a promotion focus places attention on the pros and potential benefits derived from this entrepreneurial intention, and inclines individuals to persist and explore further (McMullen & Zahra, 2006). It also puts them in a better position to identify opportunities, and makes them require lower thresholds before deciding to act on these opportunities (Tumasjan & Braun, 2012).

In contrast, individuals with a high entrepreneurial intention, but who are driven by prevention-related work motivations (job security and avoiding job responsibility) will feel discouraged from acting on their intentions. They may exhibit a high intention despite their prevention-related motivations because their perceived support (subjective norm) or behavioural control is high (Ajzen, 1991). However, the focus on the potentially negative consequences will prevent them from acting on those intentions and more likely keep them on the familiar employee route (McMullen & Zhara, 2006). They will favour the status quo over the risk of ultimately finding themselves in a worse situation (Higgins & Cornwell, 2016). Hence, while the work motivations of individuals may have a direct influence on the formation of their entrepreneurial intention and action (hypotheses 1 and 2), another mechanism may be at work. For a given level of intention, they may also have an indirect, moderation effect on the transformation of this intention into actual action. This represents our final set of hypotheses.

H3: Promotion-related motivations of having autonomy, managing the whole process, and seeking economic rewards will reinforce the relationship between entrepreneurial intention and behaviour.

H4: Prevention-related motivations of avoiding job responsibility and seeking job security will weaken the relationship between entrepreneurial intention and behaviour.

In light of the literature presented above, we propose our research model (Figure 1) to analyze the impact of career motivations on entrepreneurial participation. The empirical analysis is presented in the following section.

[Insert Figure 1]

Methodology

Sample and Data

The data collection for this study had two waves and was undertaken by a Junior Enterprise (JE) student association,¹ under the supervision of an entrepreneurship professor. Similarly to Shinnar et al. (2017), at the time of the first data collection the respondents were enrolled as higher education students. Using other student associations in France as relays for the diffusion of the questionnaire, the JE collected 2,283 responses from students in a variety of institutions including business schools, engineering schools, and generalist universities, to provide a wide representativeness and increase the generalizability of the results. To ensure the sample's homogeneity, only individuals between 17 and 26 years of age (the limit to benefit from student social security in France) were retained. In addition, responses with missing values

in age or gender were removed. This left an initial usable sample of 2,188 responses (described in Table 2 below).

[Insert Table 2]

The follow-up data were collected five years later, in 2016, to identify the individuals' professional status and whether they had been involved in an entrepreneurial project since 2011. This left enough time for the respondents to start their career and be considered as young professionals, and eliminated the bias of using student samples often present in entrepreneurship research (Shinnar et al., 2017). In addition, it enabled the inclusion of individuals considering both entrepreneurial and employee careers (Carter et al., 2003; Krueger et al., 2000). A very high attrition rate was experienced, as could be expected given the extended time lapse between the two data collections, and the substantial changes in personal situations that are common after graduation. Even so, 155 valid responses were collected. Based on the information collected in 2011, we compared the characteristics of the follow-up subsample with that of the full 2011 sample and found no evidence of non-response bias in average age (21.31 for the follow-up respondents versus 21.30 for the original full sample), role models (63% versus 64%), enrolment in business (29.7% versus 29.0%) or engineering schools (53.6 % versus 55.1%), or gender (41.3% versus 47%, not statistically significant).

Measures

Our dependent variable measures whether the respondents had been involved in creating an organization (Gartner, 1988) between 2011 and 2016. When designing such studies, one should seek to avoid survivor bias, and to include those who withdrew between the two data collections, or are still in the process of starting (Carter et al., 2003). Thus, our measure of

entrepreneurial behaviour is the (binary) answer to the question: “Since 2011, have you been directly involved in a start-up project (as a member of the management team)?” Among the 155 respondents, 31 (20.0%) indicated that they had (answered yes). Their project status at the time of the 2016 data collection was as follows: 14 were up and running, six had been launched but then stopped, five were still in the pre-start-up phase and, finally, six had withdrawn during the preparation phase.

Entrepreneurial intention was measured in 2011 based on the three items used by Kolvereid (1996) and two additional items used to assess the perceived likelihood of starting a venture in a given time period (one year and five years after finishing the studies). These two items are frequently used in entrepreneurship research (Autio, Keeley, Klofsten, Parker, & Hay, 2001; Dohse & Walter, 2012; Rauch & Hulsink, 2015).

Regarding motivations, the initial research instrument included the 33 items identified by Kolvereid (1996) as potential reasons for career choice, and classified by this author into 11 categories (five thought to favour organizational employment and six self-employment). Specifically, the respondents were asked the following question: “For each of the following elements, please indicate its importance for your career choice on a scale going from ‘not important’ (1) to ‘very important’ (7).” The items were randomly ordered in the questionnaire. Examples of items related to organizational employment include “job security” or “having a simple, not complicated job”, while “economic opportunity” or “independence” are items related to self-employment (see Table 4 below).

In addition, the literature highlights a series of important aspects related to the profile of individuals that may have an impact on entrepreneurial career choices (Hindle, Klyver, & Jennings, 2009), which we therefore include as control variables: gender, fields of study, the presence of entrepreneurial role models, and age. Regarding gender, being a female has long been associated with lower entrepreneurial intentions and involvement (Kelley et al., 2017).

Similarly, concerning the field of studies, business students appear to have higher entrepreneurial intention levels than their counterparts pursuing science and technology or humanities tracks (Schwarz, Wdowiak, Almer-Jarz, & Breiteneker, 2009). Next, contact with role models is also regularly presented in the literature as influencing a person's professional values (Boissin, Branchet, Delanoë, & Velo, 2011) and actual entrepreneurial activities (Shirokova et al., 2016). Finally, age is also regularly included as a control (Renko et al., 2012; Schwarz et al., 2009; Zellweger et al., 2011). These variables are measured as follows: a binary variable for gender (1 = female), a three-category variable for field of studies (business school, engineering school, general university), a binary variable for knowing an entrepreneurial role model (1 = yes), and the number of years for age.

Analysis

Exploratory factor analysis (EFA) was used to deplete the intention and attitude scales (Henson & Roberts, 2006; Matsunaga, 2010). The principal axis factoring method, recommended as the most adequate for identifying and understanding latent constructs, was used together with an oblique rotation (oblimin) to facilitate the interpretation of results (Conway & Huffcutt, 2003; Costello & Osborne, 2005). Strict criteria were set for retention of items (Hair, Black, Babin, & Anderson, 2014): factor loading had to be higher than .5 (a limit aimed at providing convergent validity and practical significance), cross-loading on a different factor lower than .30 (in order to provide adequate discriminant validity between factors), and the items had to exhibit a communality of at least .40 to be retained (Costello & Osborne, 2005). The depletion process consisted in running the EFA iteratively. After each iteration, the item not meeting the criteria—having the lowest factor loading and/or highest cross-loading, and/or the lowest communality—was excluded and the EFA was repeated. This process was reiterated until all remaining items met the inclusion criteria and the results were fully satisfactory.

Finally, we checked the Cronbach's alphas of the resulting scales to verify their internal consistency.

Intention scale. The EFA was first used to deplete the intention scale. This resulted in the removal of one item from Kolvereid's (1996) original list, namely the reverse-coded question "how likely is it that you will pursue a career as employed in an organization?" due to its low loading (.394). Table 3 presents the factor loadings and Cronbach's alpha.

[Insert Table 3]

Attitude scale. The depletion method was then applied to the attitude items. However, while the initial list proposed by Kolvereid (1996) included 33 items, we first checked that these items were indeed individually significantly related to intention.² Using the 0.10 significance level, only 24 of the 33 original items had a significant correlation with intention. We thus removed the nine items that failed to meet that criterion and ran the EFA on the remaining 24 items.³ The initial EFA for the 24 attitude items yielded five factors with eigenvalues greater than one, also confirmed by the analysis of the Scree plot (Costello & Osborne, 2005). The iterative process described above was then followed, leading to the 12-item solution presented in Table 4.

[Insert Table 4]

The emerging factors have clear meanings and represent one, or the merging of two, of the original sub-scales used by Kolvereid (1996) (Table 4 includes the wording of each item). The first one, autonomy, includes three out of four of Kolvereid's (1996) original autonomy items. The second one, avoiding job responsibility, includes two items from the avoid

responsibility and one from the workload subscales. Factors three and four are the same as in the original scale: job security and managing the whole process. Finally, factor five, economic reward, includes two of the three original items from the economic subscale. Furthermore, the dimensions represented by these factors exhibit satisfactory levels of internal consistency, as shown by Cronbach's alphas above or close to the .70 recommended threshold. Only economic reward shows a low, although acceptable, alpha of .629 (Hair et al., 2014).

Relationship Between Career Motivations, Intention, and Entrepreneurial Behaviour

As a confirmation of the usefulness of the depurated career motivation dimensions, the mean scores (Hair et al., 2014) were computed for each of the resulting scales and the relationships between them and entrepreneurial intention and behaviour were tested (Table 5). As suggested by our first hypothesis, promotion-related motivations exhibit positive correlations with intention (autonomy being by far the strongest), while prevention-related ones show a negative relationship (job security being the strongest).

[Insert Table 5]

Furthermore, to test our hypotheses, Partial Least Squares (PLS) analysis with SmartPLS 3.2.4 software (Ringle, Wende, & Becker, 2015) was used to assess the relationship between motivations, entrepreneurial intention, and entrepreneurial behaviour. As before, an iterative process was followed. The least significant path was removed at each iteration and the process repeated until all remaining path coefficients were significant at least at the $p < 0.10$ level.

Initially, a saturated model was proposed in which all five motivations explain intention and behaviour, and intention also explains behaviour. Additionally, all moderation effects from

motivations on the intention-behaviour link were also included in the form of interactions. Background variables were also included (age, gender, role model, business school and engineering school students) as affecting entrepreneurial intention and behaviour. The iterative process was implemented using a bootstrapping method with 500 samples. The resulting model is presented in Figure 2.

[Insert Figure 2]

The measurement model is satisfactory (Hair, Hult, Ringle, & Sarstedt, 2017). All loadings are above the usual 0.7 threshold except the first autonomy item (0.655, which may be considered acceptable). All constructs present satisfactory levels of composite reliability (CR indexes above 0.811, and Cronbach's alphas above 0.7 except autonomy with 0.697) and average variance extracted (the lowest is 0.592, well above the usual 0.5 threshold). The model explains over 36% of the variance in intention (adjusted $R^2 = 0.368$) and almost 30% of the variance in behaviour (adjusted $R^2=0.299$).

Regarding the structural model, only three of the five motivations remain as significant predictors of either the entrepreneurial intention or behaviour, but they all are in the expected direction. Entrepreneurial intention is very strongly related to the motivations of autonomy (positively) and job security (negatively), as hypotheses *H1a* and *H2a* predicted. In turn, behaviour is explained by managing the whole process (positively) and job security (negatively), in line with hypotheses *H1b* and *H2b*. Additionally, job security negatively moderates the relationship between entrepreneurial intention and behaviour, in line with hypothesis *H4*. No support is found for hypothesis *H3*. Therefore, job security seems to be the most important (preventive-focused) motivation in the entrepreneurial process. It not only lowers the entrepreneurial intention of the respondents, but also diminishes the chances that

they will participate in any start-up, both directly and negatively moderating the effect of intention. On the other hand, autonomy (through its direct effect on intention) and managing the whole process (through its direct effect on behaviour) are the most important promotion-focused motivations.

Discussion

In their study involving nascent entrepreneurs already in the process of setting up their activity, Carter et al. (2003, p.21) indicated that they believed that “when questions are asked before the fact, the reasons offered by potential entrepreneurs for getting into business will not be significantly different from the reasons offered by a similar comparison group of individuals in other types of careers.” On the contrary, our study shows that, when taking a longitudinal approach, differences emerge. We now discuss our findings, which show that entrepreneurial behaviour depends not only on intention, but also on the different balance of career motivations driving individuals.

Summary

In this study, we aimed to investigate the relationships between various career motivations, entrepreneurial intention and subsequent entrepreneurial behaviour. Using a large sample of French individuals initially surveyed during their studies and again five years later, our extended data collection enabled us to show the different roles played by various career motivations throughout the entrepreneurial process, which, to our knowledge, has not been done before. By relating these motivations to promotion- and prevention-related stances, we were able to show the impact of such cognitive postures for young adults entering their professional life. We therefore believe that the present study provides very interesting insights for both

scholars and practitioners. For scholars, it presents a thorough analysis of the mechanisms through which various promotion- and prevention-related career motivations interact to influence entrepreneurial intention and behaviour differently. Specifically, we show that the prevention-related motivation of job security plays a predominant inhibiting role throughout the process. Meanwhile, autonomy and managing the whole process, both promotion-related aspects, exert their positive influence at different stages of the entrepreneurial journey, respectively entrepreneurial intention formation and behaviour. Furthermore, from a methodological standpoint, the study relies on longitudinal data collection and rigorous data analysis. This enables the identification of these effects based on a parsimonious yet comprehensive multi-dimensional career motivation scale relevant not only in analyzing intention formation, but also actual entrepreneurial action. Finally, the study offers implications for practitioners and policy makers looking to support aspiring entrepreneurs throughout their entrepreneurial journeys.

Contributions to Scholarship

From a theoretical standpoint, our ability to demonstrate direct links between some career motivations related to different regulatory foci (Brockner et al., 2004; Fischer et al., 2018; Higgins, 1997), entrepreneurial intention and entrepreneurial behaviour, but also moderation effects, is of particular importance. In fact, based on Ajzen's (1991) propositions, the vast majority of entrepreneurship studies consider career motivations to exert their influence on actual entrepreneurial behaviour only indirectly via the formation of entrepreneurial intention. We show that the effect may also be directly impacting entrepreneurial action and the likelihood of transforming entrepreneurial intention into real endeavours. In addition, existing studies often look at the overall promotion and prevention foci of entrepreneurs without investigating the related motivational characteristics (Fischer et al., 2018). By proposing to look at career

motivations as either promotion- or prevention-related, we contribute to bringing together these two approaches. Overall, and after controlling for the respondents' profiles, our model explains over 36% (36.8%) of the entrepreneurial intention level of individuals, above that identified by other scholars (Schlaegel & Koenig, 2014), and almost 30% of the variance in entrepreneurial involvement, which compares fairly well with the 28% to 33% found by van Gelderen et al. (2015).

About the career motivation scale, the results are notably robust and enable us to propose a new, more parsimonious, factor structure derived from Kolvereid's (1996) original scale (Table 4). Since Kolvereid's (1996) study, the world economy has witnessed strong evolutions, such as the revolution of information and communication technology, to mention only one. In fact, our sample includes individuals born toward the end of the so-called Generation Y,⁴ and raised with the advent of the Internet, while Kolvereid's sample was comprised of people born in the later period of Generation X. It is likely that perceptions toward entrepreneurial or organizational careers evolved concomitantly with the evolutions taking place in our economies.

We differentiated between prevention-related motivations (avoiding job responsibility and seeking job security) and promotion-related motivations (autonomy, economic reward, and managing the whole process). Thanks to our analysis, we show that job security appears to be of utmost importance when choosing between an entrepreneurial and an employee career, as it is the only motivation exhibiting persistence throughout the process. It is directly and negatively related with the formation of both entrepreneurial intention and actual entrepreneurial behaviour, and it moderates the strength of the link between entrepreneurial intention and action. In other words, it acts as a strong inhibitor of entrepreneurial undertakings throughout the process. This is particularly important for scholars who tend to focus on positive influences for entrepreneurship, but attention should also be paid to those aspects limiting entrepreneurial

activity. Autonomy, on the other hand, is important in fostering entrepreneurial intention. Nonetheless, when it comes to actual transformation, its impact vanishes. Hence, it is important in the motivational phase, but not for the implementation of actual entrepreneurial undertakings. Rather, when it comes to starting a venture, wanting to manage the whole process becomes important. Managing the whole process has a direct influence on actual entrepreneurial involvement. This motivation is positively correlated with autonomy, but more concrete and hands-on, and hence its specific importance for specific achievements. Respondents motivated by this attitude may not be initially thinking about starting up, but they probably realize that it will be difficult for them to satisfy this motivation as an employee, and it therefore becomes an important driver for ultimately participating in a start-up project.

Overall, we believe the focus on these factors make it possible to capture a higher comprehension of the entrepreneurial process more parsimoniously than Kolvereid's (1996) initial proposition.

Applied Implications

Applied implications derived from the role of different motivations for entrepreneurship relate to promotion policy and entrepreneurship education. As discussed above, regarding the specific mechanisms through which career motivations operate, the relationships with entrepreneurial intention for the five career motivations are as expected (see the correlations in Table 5). However, when considered altogether, autonomy and job security stand out as the main determinants of entrepreneurial intention. Turning intention into action is a different matter, however. Successful careers in large companies are a very frequent option for these young adults. They often find that they can fulfill their autonomy and economic achievement in large companies, while also achieving a higher sense of security than in an entrepreneurial project. Therefore, the motivation to participate in the whole process is more relevant in making

these usually successful graduates decide to start a new venture. The correlations between motivations and behaviour shown in Table 5 are also in line with this reasoning.

The results for job security has important practical implications. It will not be a surprise to advisors in contact with individuals entering the workforce that one of their concerns is the management of their future careers and the risks associated with entrepreneurial paths. In fact, some fear what may happen if their venture does not make it through and that it may have a negative impact on their subsequent career. For advisors, this means that for this specific population, explaining how an entrepreneurial involvement can be valued on a resumé, even when the venture stops, could represent a way to bring reassurance to these individuals. In fact, we know that during entrepreneurial journeys individuals develop competences and networks that can later be reused in other settings, be they entrepreneurial or employee paths (Bates, 2005; Rae, 2005). From an institutional standpoint, the French government is currently investigating ways of extending unemployment benefits to entrepreneurs, rather than just employees.⁵ Our results suggest that this could be a step toward reassuring aspiring entrepreneurs, by providing them with some security if their venture fails and potentially remove some resistance toward entrepreneurial paths.

The implications of these results are also very relevant in the design and implementation of entrepreneurship education programs (Nabi, Liñán, Krueger, Fayolle, & Walmsley, 2017). If these programs aim to develop their students' pro-entrepreneurial attitudes, in particular that of autonomy, they will indeed be contributing to increasing their intention to start up. Notwithstanding, based on our results, it seems important that entrepreneurship education programs insist on lowering the sense of job insecurity associated with entrepreneurship and on developing the whole process attitude (the interest in taking part and participating in all the stages of the production process). Ultimately, these dimensions differentiate between the individuals who will get involved and those who will not.

Limitations and Suggestions for Future Research

In a recent research effort, McNally et al. (2016) proposed a different scale based on Kolvereid (1996), comprising eight items representing three dimensions, which they labelled workload, autonomy, and creativity. Compared to theirs, we believe that our proposition, while ensuring parsimony, preserves more comprehensiveness. Given that both propositions are based on the same original scale, we think that a comparison of their respective explanatory powers could provide an interesting research opportunity. Furthermore, our scale could prove useful for researchers who want, for example, to undertake cross-cultural comparisons. It would be very interesting to replicate this study in other countries with different social valuations of entrepreneurship and typical career paths of university graduates (public sector, SMEs, and so on). In this regard, McNally et al. (2016) used samples from Canada and the USA, while our sample is from France. The specific valences associated with alternative career choices are probably culture-dependent, as suggested by cross-cultural studies (Engle et al., 2010; Liñán & Chen, 2009). In some cultures, such as those in Canada and the USA, entrepreneurship is a more common career option for university graduates, and the structure of attitude dimensions relevant for this option may be simpler. In contrast, Europe (and in this case France) is characterized by a different university and labour-market system, in which the relationships between the motivations relevant for a career choice may be more complex. Thus, replication would enable testing the cross-cultural validity of the proposed career motivations, and possibly relate them to institutional settings in place. In addition, we did not analyze possible interactions between the career motivations themselves and believe this could further inform the underlying mechanisms at work.

Next, while we focused on the impact of different types of motivations on entrepreneurial intention and action for young adults, other aspects could be combined into interesting studies. Recent examples include considering the combined impact of a regulatory focus and self-

efficacy on opportunity identification (Tumasjan & Braun, 2012), or focusing on specific types of entrepreneurship such as sustainable (Fischer et al., 2018) or academic entrepreneurship (Foo, Knockaert, Chan, & Erikson, 2016). Additionally, some other potentially relevant variables could have been controlled for. In particular, other well-established antecedents of intention, such as perceived behavioural control and subjective norms, could have been included (Ajzen, 1991). This is a limitation of the study that should be taken into account in future research to confirm or refute our results.

In terms of limitations, given our five-year time lapse, the attrition rate is relatively high for the follow-up study. Undoubtedly, being able to analyze how career motivations and intention influence actual subsequent start-up represents a major and critical avenue for future research (Fayolle & Liñán, 2014; Liñán & Fayolle, 2015; Schlaegel & Koenig, 2014). Although limited by the sample size, we tried to contribute to this avenue. Nevertheless, much more is still to be done. Finally, our study does not enable us to analyze the type of venture created. Cassar (2007) suggested that different motivations could have an impact on the subsequent growth achieved and this could therefore represent another interesting area to delve into.

Conclusion

In this article we rely on a refined career motivation scale adapted from Kolvereid's (1996) seminal work. We show how dimensions related to a promotion or a prevention stance play varying roles in contributing first to the formation of an entrepreneurial intention and then to actual involvement in an entrepreneurial project. Using a unique data set and a follow-up study, this proposition is robust and provides good explanatory power for both entrepreneurial intention and behaviour. With this study, we hope to contribute to clarifying some of the complexity involved in the entrepreneurial process, from attitude to intention and then to actual

start-up. In addition, our reduced scale, which groups 12 items around five dimensions, could contribute to bringing more coherence and comparability for studies in the field of entrepreneurship, which still lacks homogeneity in its measurements. While progress has been made, too many studies in entrepreneurship research still stop at the intention stage. This one, on the other hand, attempts to investigate the process all the way to entrepreneurial behaviour and highlights interactions between the different constructs that call for further investigations.

JEL classification: J24, L26, M13

Endnotes

- 1 More information about how JEs operate can be found at: www.jadenet.org/about/what-is-a-junior-enterprise/ (Retrieved February 8, 2017).
- 2 The authors want to thank Professor Lars Kolvereid for his suggestion in this respect.
- 3 Note that restricting the criteria to a .05 significance level resulted in the removal of the same items.
- 4 <http://www.socialmarketing.org/newsletter/features/generation3.htm> (Retrieved March 2, 2016).
- 5 https://www.challenges.fr/emploi/la-reforme-macron-de-l-assurance-chomage-fait-consensus-chez-les-francais_510626 (Retrieved December 18, 2017).

References

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179–211.
- Ajzen, I., & Gilbert Cote, N. (2008). Attitudes and the prediction of behavior. In W. D. Crano & R. Prislin (Eds.), *Attitudes and attitude change* (pp. 289–311). New York, NY: Psychology Press.
- Autio, E., Keeley, R. H., Klofsten, M., Parker, G. G. C., & Hay, M. (2001). Entrepreneurial intent among students in Scandinavia and in the USA. *Enterprise & Innovation Management Studies*, 2(2), 145–160.
- Aziz, N., Friedman, B. A., & Sayfullin, S. (2012). Motives and perceived problems of students as aspiring entrepreneurs: Differences across the Kyrgyzstan, Georgia, and the United States. *International Journal of Business and Social Science*, 3(13), 102–113.
- Bates, T. (2005). Analysis of young, small firms that have closed: Delineating successful from unsuccessful closures. *Journal of Business Venturing*, 20(3), 343–358.
- Boissin, J.-P., Branchet, B., Delanoë, S., & Velo, V. (2011). Gender's perspective of role model influence on entrepreneurial behavioral beliefs. *International Journal of Business*, 16(2), 182–206.
- Boissin, J.-P., Chollet, B., & Emin, S. (2009). Les déterminants de l'intention de créer une entreprise chez les étudiants: Un test empirique. *M@n@gement*, 12(1), 28–51.
- Brockner, J., Higgins, T., & Low, M. B. (2004). Regulatory focus theory and the entrepreneurial process. *Journal of Business Venturing*, 19(2), 203–220.
- Bryant, P. (2007). Self-regulation and decision heuristics in entrepreneurial opportunity evaluation and exploitation. *Management Decision*, 45(4), 732–748.

- Carsrud, A., & Brännback, M. (2011). Entrepreneurial motivations: What do we still need to know? *Journal of Small Business Management*, 49(1), 9–26.
- Carter, N. M., Gartner, W. B., Shaver, K. G., & Gatewood, E. J. (2003). The career reasons of nascent entrepreneurs. *Journal of Business Venturing*, 18(1), 13–39.
- Cassar, G. (2006). Entrepreneur opportunity costs and intended venture growth. *Journal of Business Venturing*, 21(5), 610–632.
- Cassar, G. (2007). Money, money, money? A longitudinal investigation of entrepreneur career reasons, growth preferences and achieved growth. *Entrepreneurship & Regional Development*, 19(1), 89–107.
- Conway, J. M., & Huffcutt, A. I. (2003). A review and evaluation of exploratory factor analysis practices in organizational research. *Organizational Research Methods*, 6(1), 147–168.
- Costello, A. B., & Osborne, J. W. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical assessment, research and evaluation*, 10(7), 1–9.
- Crowe, E., & Higgins, E. T. (1997). Regulatory focus and strategic inclinations: Promotion and prevention in decision-making. *Organizational Behavior and Human Decision Processes*, 69(2), 117–132.
- Davidsson, P. (1995, November). *Determinants of entrepreneurial intentions*. Paper presented at the Rent IX Workshop, Piacenza, Italy.
- De Clercq, D., Honig, B., & Martin, B. (2013). The roles of learning orientation and passion for work in the formation of entrepreneurial intention. *International Small Business Journal*, 31(6), 652–676.
- Delanoë-Gueguen, S., & Fayolle, A. (2018). Crossing the entrepreneurial rubicon: A longitudinal investigation. *Journal of Small Business Management*, doi: 10.1111/jsbm.12419

- Delanoë, S. (2013). From intention to start-up: The effect of professional support. *Journal of Small Business and Enterprise Development*, 20(2), 383–398.
- dePillis, E., & Reardon, K. K. (2007). The influence of personality traits and persuasive messages on entrepreneurial intention: A cross-cultural comparison. *Career Development International*, 12(4), 382–396.
- Dohse, D., & Walter, S. G. (2012). Knowledge context and entrepreneurial intentions among students. *Small Business Economics*, 39(4), 877–895.
- Douglas, E. J., & Shepherd, D. A. (2002). Self-employment as a career choice: Attitudes, entrepreneurial intentions, and utility maximization. *Entrepreneurship Theory and Practice*, 26(3), 81–90.
- Engle, R. L., Dimitriadi, N., Gavidia, J. V., Schlaegel, C., Delanoë, S., Alvarado, I., . . . Wolff, B. (2010). Entrepreneurial intent: A twelve country evaluation of Ajzen's model of planned behavior. *International Journal of Entrepreneurial Behaviour & Research*, 16(1), 35–57.
- Fayolle, A., & Gailly, B. (2015). The impact of entrepreneurship education on entrepreneurial attitudes and intention: Hysteresis and persistence. *Journal of Small Business Management*, 53(1), 75–93.
- Fayolle, A., & Liñán, F. (2014). The future of research on entrepreneurial intentions. *Journal of Business Research*, 67(5), 663–666.
- Fayolle, A., Liñán, F., & Moriano, J. A. (2014). Beyond entrepreneurial intentions: Values and motivations in entrepreneurship. *International Entrepreneurship and Management Journal*, 10(4), 679–689.
- Fischer, D., Mauer, R., & Brettel, M. (2018). Regulatory focus theory and sustainable entrepreneurship. *International Journal of Entrepreneurial Behavior & Research*, 24(2), 408–428.

- Fitzsimmons, J. R., & Douglas, E. J. (2011). Interaction between feasibility and desirability in the formation of entrepreneurial intentions. *Journal of Business Venturing*, 26(4), 431–440.
- Foo, M. D., Knockaert, M., Chan, E. T., & Erikson, T. (2016). The individual environment nexus: Impact of promotion focus and the environment on academic scientists' Entrepreneurial Intentions. *IEEE Transactions on Engineering Management*, 63(2), 213–222.
- Frank, H., Lueger, M., & Korunka, C. (2007). The significance of personality in business start-up intentions, start-up realization and business success. *Entrepreneurship & Regional Development*, 19(3), 227–251.
- Friedman, B. A., Aziz, N., Keles, I., & Sayfullin, S. (2012). Predictors of students' desire to be an entrepreneur: Kyrgyzstan, Georgia, and the United States. *Eurasian Journal of Business and Economics*, 5(9), 129–140.
- Gartner, W. B. (1988). "Who is an entrepreneur?" is the wrong question. *American Journal of Small Business*, 12(4), 11–32.
- Giacomin, O., Janssen, F., Pruett, M., Shinnar, R. S., Llopis, F., & Toney, B. (2011). Entrepreneurial intentions, motivations and barriers: Differences among American, Asian and European students. *International Entrepreneurship and Management Journal*, 7(2), 219–238.
- Gollwitzer, P. M. (1996). Benefits of planning. In P. M. Gollwitzer & J. A. Bargh (Eds.), *The psychology of action: Linking cognition and motivation to behavior*. New York, NY: Guilford.
- Gundry, L. K., & Welsch, H. P. (2001). The ambitious entrepreneur: High growth strategies of women-owned enterprises. *Journal of Business Venturing*, 16(5), 453–470.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). *Multivariate Data Analysis*. (7th ed.). Essex, UK: Pearson.

- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Thousand Oaks, CA: Sage.
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A Regression-based approach*. New York, NY: Guilford.
- Henson, R. K., & Roberts, J. K. (2006). Use of exploratory factor analysis in published research: Common errors and some comment on improved practice. *Educational and Psychological Measurement, 66*(3), 393–416.
- Higgins, E. T. (1997). Beyond pleasure and pain. *American Psychologist, 52*(12), 1280–1300.
- Higgins, E. T., & Cornwell, J. F. M. (2016). Securing foundations and advancing frontiers: Prevention and promotion effects on judgment & decision making. *Organizational Behavior and Human Decision Processes, 136*, 56–67.
- Hindle, K., Klyver, K., & Jennings, D. F. (2009). An “informed” intent model: Incorporating human capital, social capital, and gender variables into the theoretical model of entrepreneurial intentions. In A. L. Carsrud & M. Brännback (Eds.), *Understanding the entrepreneurial mind. Opening the black box* (pp. 35–50). New York, NY: Springer.
- Hmieleski, K. M., & Baron, R. A. (2008). Regulatory focus and new venture performance: A study of entrepreneurial opportunity exploitation under conditions of risk versus uncertainty. *Strategic Entrepreneurship Journal, 2*(4), 285–299.
- Jaskiewicz, P., Luchak, A. A., Oh, I.-S., & Chlosta, S. (2016). Paid employee or entrepreneur? How approach and avoidance career goal orientations motivate individual career choice decisions. *Journal of Career Development, 43*(4), 349–367.
- Kautonen, T., van Gelderen, M., & Tornikoski, E. T. (2013). Predicting entrepreneurial behaviour: a test of the theory of planned behaviour. *Applied Economics, 45*(6), 697–707.

- Kelley, D. J., Baumer, B. S., Brush, C., Greene, P. G., Mahdavi, M., Majbouri, M., . . . Heavlow, R. (2017). Global Entrepreneurship Monitor 2016/2017. Report on Women's Entrepreneurship. Retrieved from <http://www.gemconsortium.org/report>
- Kolvereid, L. (1996). Prediction of employment status choice intentions. *Entrepreneurship Theory and Practice*, 21(1), 47–57.
- Kolvereid, L., & Isaksen, E. (2006). New business start-up and subsequent entry into self-employment. *Journal of Business Venturing*, 21(6), 866–885.
- Krueger, N. F. (2009). Entrepreneurial intentions are dead: Long live entrepreneurial intentions. In A. L. Carsrud & M. Brännback (Eds.), *Understanding the entrepreneurial mind. Opening the black box* (pp. 51–72). New York, NY: Springer.
- Krueger, N. F., Reilly, M. D., & Carsrud, A. L. (2000). Competing models of entrepreneurial intentions. *Journal of Business Venturing*, 15(5-6), 411–432.
- Kuratko, D. F., Hornsby, J. S., & Naffziger, D. W. (1997). An examination of owner's goals in sustaining entrepreneurship. *Journal of Small Business Management*, 35(1), 24–33.
- Lazear, E. P. (2005). Entrepreneurship. *Journal of Labor Economics*, 23(4), 649–680.
- Lieberman, N., Idson, L. C., Camacho, C. J., & Higgins, E. T. (1999). Promotion and prevention choices between stability and change. *Journal of Personality and Social Psychology*, 77(6), 1135–1145.
- Liñán, F., & Chen, Y.-W. (2009). Development and cross-cultural application of a specific instrument to measure entrepreneurial intentions. *Entrepreneurship Theory and Practice*, 33(3), 593–617.
- Liñán, F., & Fayolle, A. (2015). A systematic literature review on entrepreneurial intentions: citation, thematic analyses, and research agenda. *International Entrepreneurship and Management Journal*, 11(4), 907–933.

- Liñán, F., & Rodríguez-Cohard, J. C. (2015). Assessing the stability of graduates' entrepreneurial intention and exploring its predictive capacity. *Academia Revista Latinoamericana de Administración*, 28(1), 77–98.
- Manolova, T. S., Brush, C., & Edelman, L. (2008). What do women entrepreneurs want? *Strategic Change*, 17(3-4), 69–82.
- Matsunaga, M. (2010). How to factor-analyze your data right: Do's, don'ts, and How-To's. *International Journal of Psychological Research*, 3(1), 97–110.
- McMullen, J. S., & Zahra, S. A. (2006). Regulatory focus and executives intentions to commit their firms to entrepreneurial action. *Frontiers of Entrepreneurship Research*, 26(23).
- McNally, J. J., Martin, B. C., Honig, B., Bergmann, H., & Piperopoulos, P. (2016). Toward rigor and parsimony: A primary validation of Kolvereid's (1996) entrepreneurial attitude scales. *Entrepreneurship & Regional Development*, 28(5/6), 358–379.
- Nabi, G., Liñán, F., Krueger, N., Fayolle, A., & Walmsley, A. (2017). The impact of entrepreneurship education in higher education: A systematic review and research agenda. *Academy of Management Learning & Education*, 16(2), 277–299.
- Nasurdin, A. M., Ahmad, N. H., & Lin, C. E. (2009). Examining a model of entrepreneurial intention among Malaysians using SEM procedure. *European Journal of Scientific Research*, 33(2), 365–373.
- Prasastyoga, B., Leeuwen, E. v., & Harinck, F. (2017). Will growth bring more good than harm to my business? The role of regulatory focus in small business growth beliefs. *Journal of Applied Social Psychology*. doi: 10.1111/jasp.12518
- Pruett, M., Shinnar, R., Toney, B., Llopis, F., & Fox, J. (2009). Explaining entrepreneurial intentions of university students: A cross-cultural study. *International Journal of Entrepreneurial Behaviour & Research*, 15(6), 571–594.
- Rae, D. (2005). Mid-career entrepreneurial learning. *Education + Training*, 47(8/9), 562–574.

- Raposo, M., do Paço, A., & Ferreira, J. (2008). Entrepreneur's profile: A taxonomy of attributes and motivations of university students. *Journal of Small Business and Enterprise Development*, 15(2), 405–418.
- Rauch, A., & Hulsink, W. (2015). Putting entrepreneurship education where the intention to act lies: An investigation into the impact of entrepreneurship education on entrepreneurial behavior. *Academy of Management Learning & Education*, 14(2), 187–204.
- Renko, M., Kroeck, K., & Bullough, A. (2012). Expectancy theory and nascent entrepreneurship. *Small Business Economics*, 39(3), 667–684.
- Ringle, C. M., Wende, S., & Becker, J.-M. (2015). SmartPLS 3: Boenningstedt: SmartPLS GmbH. Retrieved from <http://www.smartpls.com>.
- Robinson, P. B., Stimpson, D. V., Huefner, J. C., & Hunt, H. K. (1991). An attitude approach to the prediction of entrepreneurship. *Entrepreneurship Theory and Practice*, 15(4), 13–31.
- Schlaegel, C., & Koenig, M. (2014). Determinants of entrepreneurial intent: A meta-analytic test and integration of competing models. *Entrepreneurship Theory and Practice*, 38(2), 291–332.
- Schwarz, E. J., Wdowiak, M. A., Almer-Jarz, D. A., & Breitenecker, R. J. (2009). The effects of attitudes and perceived environment conditions on students' entrepreneurial intent. An Austrian perspective. *Education + Training*, 51(4), 272–291.
- Segal, G., Borgia, D., & Schoenfeld, J. (2005). The motivation to become an entrepreneur. *International Journal of Entrepreneurial Behaviour & Research*, 11(1), 42–57.
- Shane, S., Locke, E. A., & Collins, C. J. (2003). Entrepreneurial motivation. *Human Resource Management Review*, 13(2), 257–279.
- Shinnar, R. S., Hsu, D. K., Powell, B. C., & Zhou, H. (2017). Entrepreneurial intentions and start-ups: Are women or men more likely to enact their intentions? *International Small Business Journal*, 36(1), 60–80.

- Shirokova, G., Osiyevskyy, O., & Bogatyreva, K. (2016). Exploring the intention–behavior link in student entrepreneurship: Moderating effects of individual and environmental characteristics. *European Management Journal*, 34(4), 386–399.
- Simmons, S. A., Carr, J. C., Hsu, D. K., & Shu, C. (2016). The regulatory fit of serial entrepreneurship intentions. *Applied Psychology*, 65(3), 605–627.
- Souitaris, V., Zerbinati, S., & Al-Laham, A. (2007). Do entrepreneurship programmes raise entrepreneurial intention of science and engineering students? The effect of learning, inspiration and resources. *Journal of Business Venturing*, 22(4), 566–591.
- Stephan, U., Hart, M., & Drews, C.-C. (2015). Understanding motivations for entrepreneurship: A review of recent research evidence. Birmingham, UK: Enterprise Research Centre.
- Tkachev, A., & Kolvereid, L. (1999). Self-employment intentions among Russian students. *Entrepreneurship & Regional Development*, 11(3), 269–280.
- Tumasjan, A., & Braun, R. (2012). In the eye of the beholder: How regulatory focus and self-efficacy interact in influencing opportunity recognition. *Journal of Business Venturing*, 27(6), 622–636.
- Van Gelderen, M., & Jansen, P. (2006). Autonomy as a start-up motive. *Journal of Small Business and Enterprise Development*, 13(1), 23–32.
- Van Gelderen, M., Kautonen, T., & Fink, M. (2015). From entrepreneurial intentions to actions: Self-control and action-related doubt, fear, and aversion. *Journal of Business Venturing*, 30(5), 655–673.
- Vroom, V. H. (2005). On the origins of expectancy theory. In K. G. Smith & M. A. Hitt (Eds.), *Great minds in management. The process of theory development* (pp. 239–258). Oxford, UK: Oxford University Press.

Wilson, F., Marlino, D., & Kickul, J. (2004). Our entrepreneurial future: Examining the diverse attitudes and motivations of teens across gender and ethnic identity. *Journal of Developmental Entrepreneurship*, 9(3), 177–197.

Zellweger, T., Sieger, P., & Halter, F. (2011). Should I stay or should I go? Career choice intentions of students with family business background. *Journal of Business Venturing*, 26(5), 521–536.

Table 1:
Career motivations studies

| Study | Type of sample (# participants) | Operationalizations (# of items) | Dependent Variable |
|--------------------------------|---|--|-----------------------------|
| Boissin et al. (2009) | Students: France (655) | Being independent (4); achieving self-realization in one's job (4); having a good extra-professional quality of life (3); avoiding responsibilities (2 items); having high earnings (3); having a stable professional situation (2) | Attractiveness |
| Carter et al. (2003) | NEs: US PSED (558) | Innovation (2), independence (2), recognition/status (2), roles/follow others (3), financial success (4) and self-realization/self-directed goals (5) | Nascent Entrepreneur |
| Cassar (2007) | NEs: US PSED (466) | 18 items from PSED representing career reasons (same as Carter et al. 2003) | Growth |
| Davidsson (1995) | Individuals: Sweden (1,066) | General attitudes: change-orientation (4); competitiveness (5); valuation of money (4); achievement motivation (4); autonomy (4) / Domain attitudes: expected payoff (9); societal contribution (4); perceived know-how (2) | Conviction |
| De Clercq et al. (2013) | Students: Canada (946) | Attractiveness (3); learning orientation (6); passion for work (5) – Post-hoc analysis including financial reward (2 items) and autonomy (4) | Entrepreneurial intention |
| dePillis and Reardon (2007) | Students (208): US and Ireland | Personal control (10); achievement motivation (10); ambiguity tolerance (16) Attitudes: Valence of entrepreneurial perceptions (2); 'ACE' appropriateness (4); consistency (6 self- and 5 national-) and effectiveness of starting a business (2) | Entrepreneurial intention |
| Douglas and Shepherd (2002) | Alumni (300) Australia | Attitude toward: income; independence; risk and work effort. Based on evaluation of 17 career profiles | Entrepreneurial intention |
| Engle et al. (2010) | Students: 1,748 across 12 countries | Attitude: need for achievement (18); wealth (1); autonomy (7) | Entrepreneurial intention |
| Fayolle and Gailly (2015) | Students: France (158) | 32 items inspired from Kolvereid (1996): job security (2); workload (5); implication in a social milieu (5); professional and financial perspectives (5); need for challenges (4); autonomy (5); need for creative projects (6) | Entrepreneurial intention |
| Fitzsimmons and Douglas (2011) | Students (414): Australia, China, India, Thailand | Perceived desirability based on evaluation of career profiles (based on Douglas and Shepherd, 2002) Attitude toward majority ownership of the firm in which they work | Entrepreneurial intention |
| Friedman et al. (2012) | Students (305): US, Kyrgyzstan, Georgia | Motives: financial gain; recognition; freedom; family tradition | Entrepreneurial intention |
| Giacomin et al. (2011) | Students (2093): US, China, India, Spain, Belgium | 16 motivations representing 5 factors: pursuit of profit and social status (6); desire for independence (3); creation (2); personal development (2); professional dissatisfaction (3) | Entrepreneurial intention |
| Kautonen et al. (2013) | Finnish working age individuals (117) | 15 items from Kolvereid (1996) grouped in five dimensions used to compute attitude: authority and autonomy (4); self-realization (3); economic opportunity (2); avoidance of responsibility (3); security (2) | Entrepreneurial involvement |

| | | | |
|------------------------------|---|--|--|
| Kolvereid (1996) | Students (128): Sweden | 33 belief items representing 11 dimensions: security (2); workload (5); social environment (2); avoid responsibility (3); career (2); economic opportunity (3); challenge (4); autonomy (4); authority (2); self-realization (4); participate in the whole process (2) | Entrepreneurial intention |
| Kolvereid and Isaksen (2006) | Business founders (297): Norway | 12 attitude beliefs representing 4 dimensions: autonomy (4); authority (2); economic opportunity (3); self-realization (2) | Attitude |
| Krueger et al. (2000) | Students (97): US | Expected utilities of: autonomy; stress; financial performance; personal satisfaction; personal quality of life weighed by expected likelihood of occurring when starting a business | Attitude |
| Kuratko et al. (1997) | Entrepreneurs (234): US | Goals valued by entrepreneurs: 15 items representing 4 dimensions: extrinsic rewards (3); Independence/autonomy (5); intrinsic rewards (5); family security (2) | Gender effects |
| Manolova et al. (2008) | Individuals (441): US PSED | Expected outcomes: self-realization (7); status (4); financial success (4); autonomy (3) | Gender effects |
| Pruett et al. (2009) | Students (1,058): US, Spain, China | 13 items representing 5 motives: money-status (4); quality of life (2); independence (2); creativity (2); equity-opportunity (3) | Entrepreneurial intention |
| Raposo et al. (2008) | Students (316): Portugal | 24 items representing 6 factors of personal attributes and motivations: leadership and self-confidence (7); economic ambition (3); optimism (5); independence and autonomy (5); dedication to work (2); work conditions (2). | Entrepreneurial predisposition |
| Renko et al. (2012) | Individuals (817): US PSED | Valence: Self-realization, financial success, personal growth | Longitudinal |
| Robinson et al. (1991) | Students (91) and Individuals (111): US | Entrepreneurial Attitude Orientation (EAO) scale → 75 items representing 4 dimensions: innovation (26); personal control (12); self-esteem (14); achievement (23). | EAO scale |
| Schwarz et al. (2009) | Students (2,124): Austria | 12 items representing: general attitudes: toward money (2), toward change (2), toward competitiveness (2); attitude toward entrepreneurship (2); perception of university environment & regional start-up infrastructure (4) | Entrepreneurial intention |
| Segal et al. (2005) | Students (115): US | Net desirability of self-employment (NDSE) based on five expected outcomes: income potential; financial security; independence; need for achievement; and escape from corporate bureaucracy Tolerance for risk (1) | Entrepreneurial intention |
| Souitaris et al. (2007) | Students (250): France, UK | 33 items representing 11 dimensions from Kolvereid (1996b) | Attitude |
| Stephan et al. (2015) | Literature review | 7 motivations identified: achievement, challenge & learning; independence & autonomy; income security & financial success; recognition & status; family & roles; dissatisfaction; community & social motivations | Literature review |
| Tkachev and Kolvereid (1999) | Russian Students (512) | 11 dimensions of Kolvereid (1996): security; leisure; social environment; avoid responsibility; promotion; economic potential; challenge; independence; authority; self-realization; follow work tasks from a to z | Attitude |
| Wilson et al. (2004) | US Teenagers (1971) | Relational (4); social (2); autonomy (4); “making lots of money” | Interest in Entrepreneurship |
| Zellweger et al. (2011) | Students (5,363): 8 countries | Two motives: independence (5 from Kuratko et al. 1997); innovation (2 from Carter et al. 2003) | Intent: Founder, successor or employee |

Table 2
Descriptive information

| | Mean | Std. Dev. |
|---|-------------|------------------|
| Age | 21.30 | 1.61 |
| Gender | .47 | .50 |
| Entrepreneurial role model | .64 | .48 |
| Higher education Institution (distribution) | | |
| - Business school | 28.9% | --- |
| - Engineering school | 55.1% | --- |
| - University | 16.0% | --- |

Table 3*EFA results for intention items*

| | |
|--|------|
| Probability of creating one's activity within five years after graduation | .864 |
| Probability of creating one's activity within one year after graduation | .730 |
| Probability of creating one's activity one day | .700 |
| Preference between running own business and being employed by someone else | .630 |
| Cronbach's α | .810 |

Note. Extraction method: principal axis factoring.

Table 4
Depuration EFA for career motivations

| | Autonomy | Avoid job responsibility | Job security | Manage whole process | Economic reward |
|--|-----------------|-------------------------------------|-------------------------|-------------------------------------|----------------------------|
| Independence | .779 | | | | |
| Freedom | .618 | | | | |
| To be your own boss | .529 | | | | |
| Avoid responsibility | | .838 | | | |
| Not taking on too much responsibility | | .823 | | | |
| Have a simple, not complicated job | | .699 | | | |
| Job security | | | -.847 | | |
| Job stability | | | -.833 | | |
| To follow work tasks from A to Z | | | | -.821 | |
| To participate in the whole process | | | | -.725 | |
| Economic opportunity | | | | | -.747 |
| To keep a large portion of the results | | | | | -.577 |
| Cronbach's α | .691 | .834 | .828 | .743 | .629 |

Notes. N = 2188. Extraction method: principal axis factoring. Rotation method: Oblimin with Kaiser normalization. Loadings below .30 not shown for clarity.

Table 5
Correlations between model variables

| | 1 | 2 | 3 | 4 | 5 | El. |
|--------------------------------------|--------------|--------------|--------------|-------------|-------|-------------|
| 1. Autonomy | 1 | | | | | |
| 2. Avoid job responsibility | -.366 | 1 | | | | |
| 3. Job security | -.148 | .183 | 1 | | | |
| 4. Manage whole process | .232 | -.156 | -.066 | 1 | | |
| 5. Economic reward | .299 | -.217 | .153 | .124 | 1 | |
| EI. Entrepreneurial intention | .450 | -.130 | -.457 | .144 | .082 | 1 |
| Start-up behaviour | .191 | -.074 | -.346 | .175 | -.104 | .385 |

Note. N = 155. In bold significant correlation coefficients ($p < .10$).

Figure 1. Proposed research model

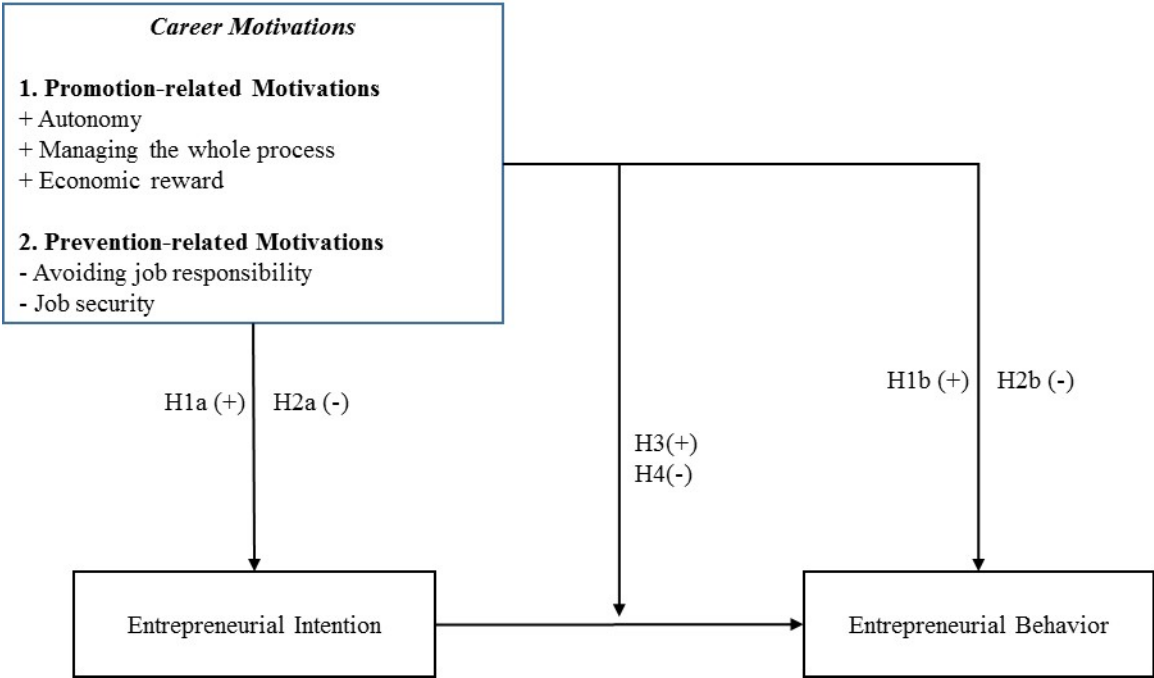
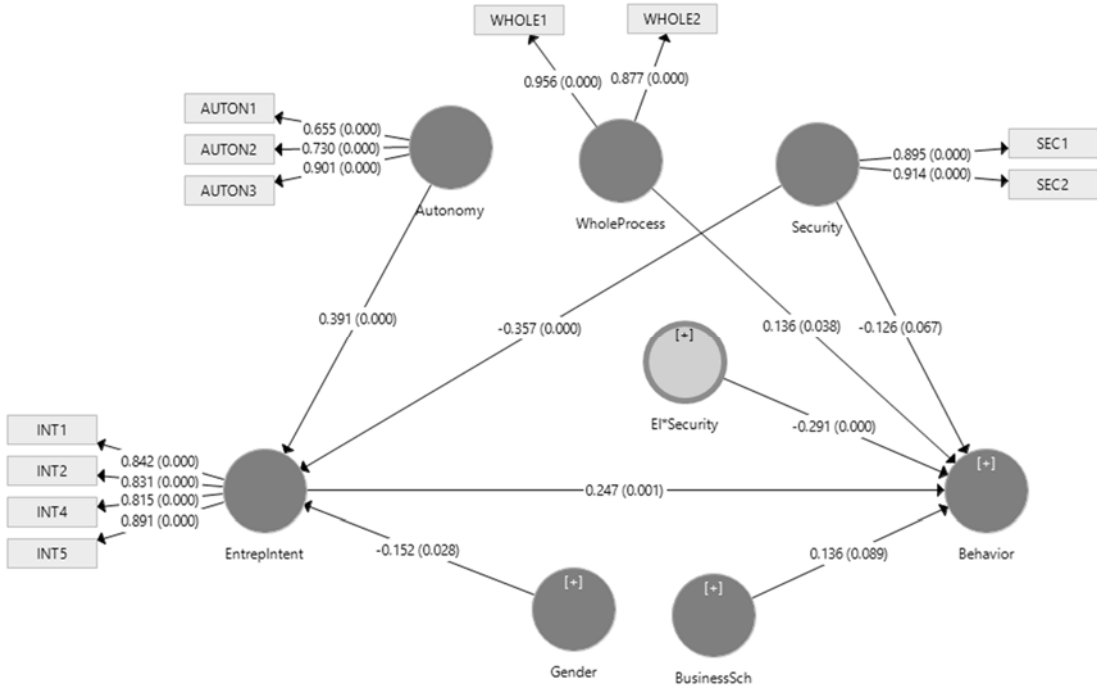


Figure 2. Moderated attitude-intention-behaviour model



Note. Standardized coefficients (*t*-values in parentheses). Significance level $p < .1$