

# **Entrepreneurial Implementation Intention as a Tool To Moderate Entrepreneurial Goal Intention: A Sensemaking Approach**

## **ABSTRACT**

This study evaluates how entrepreneurial implementation intention (EII) exerts influence on the stability in entrepreneurial goal intention (EGI). Through two waves of data collection during and after entrepreneurship education (EE), the moderating role of EII on EGI after a time period is tested with results indicating significant variation between 412 participants of high and low EII during EE. The findings contribute to a further understanding of factors that help maintain EGI over time and highlight the unconscious aspects of students' behavioural processing that potentially causes controversial results on the impact of EE on EGI.

## **Keywords:**

Entrepreneurship education

Intention stability

Sensemaking approach

Entrepreneurial goal intention

Entrepreneurial implementation intention

# **Entrepreneurial Implementation Intention as a Tool To Moderate Entrepreneurial Goal Intention: A Sensemaking Approach**

## **1. Introduction**

Insight into entrepreneurship as a process (Bakker & Shepherd, 2017; McMullen & Dimov, 2013) has suggested that actions that are taken by prospective entrepreneurs are fundamentally essential to shaping entrepreneurial opportunity (Dimov, 2007); and, “without action, there is no insight” (Gartner et al., 2003, p.144). Entrepreneurial intention (EI) is accepted as the commitment to performing a behaviour that drives the physical business start-up process (Krueger & Carsrud, 1993; Palmer et al., 2019). This article supports that entrepreneurship evolves through opportunity development by iteratively forming entrepreneurial intention(s), processing opportunity-related information, and implementing multiple opportunity-related behaviours. Throughout this process, the conditions of an entrepreneurial opportunity are altered (Corbett, 2005; Kolb, 1984; Shane, 2003), whilst one intention can potentially act as a moderator to the next intention after a behaviour is realised. Although EI as an area of academic investigation has gained traction in entrepreneurial behaviour literature (Bird, 1988; Krueger & Carsrud, 1993; Liñán & Rodríguez-Cohard, 2015), the literature has identified some issues of concern relating to the effectiveness of EI in driving action (Nabi et al., 2018). The problematic views on the link between intention and behaviour are potentially caused by an incomplete understanding of how opportunity-related information is cognitively processed after intentions are formed and before an action is taken. A more thorough understanding of the consistency of the intention-behaviour relationship, therefore, requires examination of the two underlying structures of EI that have been found to be closely related, namely entrepreneurial goal intention (EGI) and entrepreneurial implementation intention (EII) (Botsaris & Vamvaka, 2016;

Esfandiar et al., 2017; Fayolle & Liñán, 2014). It is worth noting that previous literature has made little distinction between EGI and EI by measuring EGI using Liñán & Chen's (2009) EI questionnaire. While EGI embraces the intention at the level of strategy (Adam & Fayolle, 2016), EII refers to the process of plan-making (Martijn et al., 2008) and illuminates a higher likelihood of performing actions (Fayolle & Liñán, 2014).

In the context of the academy, this area of research mainly focuses on student intentions for business start-ups and is explored through different country settings (Ahmed et al., 2017; Karimi et al., 2016; Pfeifer et al., 2016; Piperopoulos & Dimov, 2015). In these studies, EI is predominantly considered as an outcome of entrepreneurship education (EE) indicating students' increased propensity to perform entrepreneurial behaviour (Fayolle & Liñán, 2014; Moriano et al., 2011). Under this context, the mixed findings exist because forming an intention during EE programme is only a preliminary stage, and retaining intention after EE requires further motivational factors to overcome cognitive barriers. In this case, the student profile is considered such as limited elaboration, insufficient excitement, and competing goals (Gollwitzer, 1990; Van Gelderen et al., 2015). Similarly, several studies suggest that individuals who see opportunity development as an experimental process that requires over multiple actions, a moderate level of EI can be sufficient to foster action (Gollwitzer & Sheeran, 2006; Prestwich et al., 2015; Van Gelderen et al., 2018). Since EII is considered part of the motivation–opportunity nexus (Elfving et al., 2017), which has similar effects of motivational actions for sustaining opportunity development over time (Gielnik et al., 2015), investigating both EGI and EII under the view of entrepreneurship as a process allows this study to explore how EI can be maintained over time.

This study adopts a sensemaking approach (variation-selection-retention or VSR) to analyse the interaction between EGI and EII amongst students during and after EE. Thus, the student starting with an initial belief of the chances of success or failure of a business idea must ‘variate’ an intention to act, ‘select’ action, and ‘retent’ their belief post hoc to inform new courses of intention and action (Alvarez et al., 2013; Festinger, 1957; Weick et al., 2005). After EE, EGI can be substantially boosted or diminished due to confirmatory bias (Wason, 1960). This phenomenon is demonstrated as a cognitive heuristic that allows (1) readily available (either complete or incomplete) knowledge, and; (2) recent knowledge or experience gained from the EE course to dominate the decision-making or thoughts of the individual. The cognitive bias pushes the students towards either taking or avoiding actions after EE rather than other alternatives or procedures (Schwarz et al., 1991). When this occurs, the student deliberately or unconsciously overcomes the conflict between their internal mental structure (i.e., what they anticipate) and what is happening in the external world (what the environment currently offers). The question here is that, does the preference for taking action during EE improve the overall level of EGI after EE? This research adds evidence that EGI coupled with a high tendency to act during EE or high EII (Klapper & Neergaard, 2017), can contribute to maintaining EGI following the education programme.

Using data collected at two time-points from delivery of an EE course (time 1) contrasted to one year after its completion (time 2) on a sample of 412 participants from Vietnam, partial least squares path modelling (PLS-SEM) is adopted to evaluate the differences in path estimators of  $EGI_1$  to  $EGI_2$  between two groups of low  $EII_1$  and high  $EII_1$ . The context of this research is Vietnam, where it has a nascent entrepreneurship education system. As a result, students are not encouraged to take an active learning approach and adopt critical thinking. The Vietnamese culture appreciates stability and embraces conflict avoidance – or in case of

education: students passively follow what is taught in university classes (Benzing et al., 2005; Politis & Gabrielsson, 2009; Ulrich & Cole, 1987). Thus, it is suggested that this context makes Vietnamese students increasingly vulnerable to the contingent effects of confirmatory bias on EGI since internal mental conflicts are more likely to be ignored (Schwarz & Vaughn, 2002). In this case, students who tend to take action during EE may maintain a preference for it even after it has ended and vice versa.

This study contributes to the literature in entrepreneurship and education in several ways. Since entrepreneurship is a process during which entrepreneurs continuously test their ideas and turn them into opportunities through intentions, actions and reflection (Corbett, 2005; Kolb, 1984; Shane, 2003), research considering a single time-slice of intentions significantly reduces the potential to observe the “process” of opportunity development (Wood, 2017). This study highlights the moderating role of EII and paves the way for a non-linear assessment of intentions over a time period. In terms of contributions to research in entrepreneurship education, the contingent effects of EE on EI in the context of nascent entrepreneurs are highlighted adding to the theoretical grounding of the link between EE, EI, and subsequent behaviours (Henry, Hill & Leitch, 2004; Shepherd, 2015). In addition, the study enhances both the rigour and relevance of entrepreneurship research through the exogenous umbrella factor of “opportunity” indicating that time is required for opportunities to develop over action (Wood, 2017). The findings also provide practical implications for EII as a potential driver to long-term entrepreneurship under the view of decision-making (Welter et al., 2017; Ferreira & Kraus, 2019) identifying how students’ decision-making logics can be leveraged during an educational intervention (Ilonen et al., 2018). Finally, this research increases the generalisation of sensemaking research through the use of a quantitative approach on a less accessible group of students in the Global South.

## **2. Literature Review**

### *2.1. Entrepreneurial intentions and a sensemaking epistemology*

The entrepreneurship literature focusses attention on EI with business start-up as the goal and the individual's conscious processing which precedes action (Shook et al., 2003). Two key models informing EI literature are Ajzen's (1991) *Theory of Planned Behaviour* (TPB) and Shapero and Sokol's (1982) *Model of Entrepreneurial Event* (MEE). The EI literature also explores entrepreneurial intention within organisational settings. For example, Werner et al. (2014) suggest that employees who perceive their wages as unfair and, simultaneously, prefer different work hours result in having the strongest level of entrepreneurial intention. There is, however, insufficient evidence confirming the intention-behaviour relationship (Kautonen et al., 2015). Since beliefs are prior to the motivational antecedents, which in turn are previous to the intention (Ajzen, 1991), it is here that historic beliefs may remain the dominant influential force of intentions. The beliefs of uncertainty, for example, remain effective unless environmental feedback is perceived, processed and understood into a form of motivational antecedent (Gavetti & Rivkin, 2005). This view highlights the potential developments of various forms of intention before a behaviour, which may consciously or unconsciously combine to affect entrepreneurship as well as innovation (Breslin, 2011; Dobson et al., 2013). Gollwitzer (1993) and Gollwitzer and Sheeran (2006) expand this, identifying both goal and implementation intention. Goal intention acts at the level of strategy, while implementation intention refers to the process of plan-making (Martijn et al., 2008). As the implementation intention involves thinking about performing a behaviour, the term "entrepreneurial intentions" typically accounts for the first phase of goal intention in most entrepreneurship research (Adam & Fayolle, 2016, p.81).

As a general framework, it can be considered that the entrepreneurial individual will seek to form a belief of an opportunity prior to the conceptualisation of intentions (Alvarez et al., 2013). When conceptualising a solution to such a belief, the individual engages in the process of sensemaking which evolves through the interaction between the self and the external environment (Weick, 1979; Weick et al., 2005). This integrates Campbell's (1965) application of evolutionary epistemology to social life. The stages include enactment (or also "variation"), selection, and retention (VSR). This epistemology suggests that "sensemaking can be treated as reciprocal exchanges between actors [Enactment] and their environments [Ecological Change], which provide system variation, which are subsequently made meaningful [Selection] and preserved [Retention]" (Weick et al., 2005, p.409). The sensemaking meanings inform and constrain identity and action; and, several studies advocate entrepreneurs/managers rejecting signals that falsify their pre-existing beliefs while searching for information (Gavetti and Rivkin, 2005; Kunda, 1987). Fitting into the concept of sensemaking, Wason (1960) labels such a phenomenon as confirmatory bias in Psychology literature, where cases in which an outcome is said to occur or be known to have occurred constrain the direction of the test results (Peterson & Wong-On-Wing, 2000). Here, entrepreneurs form hypotheses (negative/neutral/positive) regarding opportunities and seek evidence to test the veracity of their conjectures (Shepherd et al., 2012). This process is iterative, and the revision of the hypothesis is undertaken due to discovered inadequacy (Klayman & Ha, 1989). Existing research presents problematic effects caused by confirmatory bias such as increasing the chance of employing cognitive and attitudinal heuristics in decision-making and leading to overconfidence, illusion of control, and multiple misguided beliefs in the law of small numbers (Mitchell et al., 2000; Shepherd et al., 2015).

The position for highlighting confirmatory bias in assessing EI among students is grounded in two realisations. First, research has identified contradictory results in the effects of prior experience on EI (Emami & Dimov, 2017; Miralles et al., 2016), where students have been identified as having low prior entrepreneurial experience (Shepherd et al., 2012). In the absence of direct entrepreneurial experience, other everyday experiences such as EE serve as cognitive frameworks or prototypes which define acceptability and plausibility in sensemaking (Baron, 2006) driving entrepreneurial intention (Ribeiro-Soriano & Kraus, 2018). Secondly, it has been observed that individuals often exert limited information gathering to reduce cognitive effort under conditions of bounded rationality (Tversky & Kahneman, 1974). For example, Elston and Weidinger (2019) identify that individuals in specific locations in China, where there are higher degrees of internationalisation and availability of professional job opportunities, often experience lower levels of entrepreneurial intention due to the ease of pursuing a professional career. Similarly, this study suggests that students who are offered new skills that enhance their bias towards success often overlook the gap between their entrepreneurial capabilities and the right conditions for a successful venture/entrepreneur. Thus, limited experience increases the likelihood of students allocating attention to cues that support them towards entrepreneurial success as EE is provided (Fitzsimons et al., 2008).

Variation in these cognitive frameworks or prototypes occurs when new opportunities are generated (Breslin, 2017; Kaish & Gilad, 1991). These new concepts are then transferred into selection (and retention) as the entrepreneur examines their strategic value logic and novelty (Hill & Birkinshaw, 2010) while considering the business model components such as distribution channels, marketing or sales approaches, and technologies (Kim & Mauborgne, 2004; Markides, 2000). Individuals who form an EII detailing a specific plan of where, when and how the desired behaviour will be performed are more likely to act on their intentions



compared to those having an entrepreneurial goal (Fayolle & Liñán, 2014). Prior literature has suggested EII as the motivational antecedent and proxy to entrepreneurial behaviour (Esfandiar et al., 2017) increases the chance of moving to a retention decision as to whether or not the idea will be further exploited (Shane & Venkataraman, 2000). EE research has found that decision-making logics are transformed during an educational intervention in a way that pure causal and effectual approaches are replaced by the hybrid or coping strategy (stagnation) at the completion of the course (Ilonen et al., 2018). Thus, due to the scarce opportunity to execute their ideas during EE (Klapper & Neergaard, 2017), students tend to circulate within “variation” and “selection” of sensemaking. EGI may temporarily be heightened under the effects of EE although the retention of this intention after EE requires a high level of EII as antecedent.

Building on philosophy and psychology on the entrepreneurial process, sensemaking and confirmatory bias (Klayman & Ha, 1989; McMullen & Dimov, 2013; Shane, 2008; Weick et al., 2005), this study offers a cognitive framework of EI concerning confirmatory bias.

[Figure 1 Here]

## *2.2 Hypothesis development*

EII is considered as the proxy to behaviour (Esfandiar et al., 2017). Zajonc’s (1968) study on mere-exposure paradigm, found that the more frequently an individual is exposed to an object, especially under a group context, the greater the likelihood that they will perceive it as desirable, respond positively to it, and actively engage within it. The phenomenon has been demonstrated to be robust across cultures and with different forms of objects, such as words, sounds, paintings, geometric figures, faces, and persons (Bornstein, 1989 for a meta-analysis), even when the stimuli exposed are not accessible to the participants’ awareness, or even prenatally

(Zajonc, 2001). During EE, high EII students often engage in entrepreneurially-related tasks that provide them with a higher likelihood of perceiving several experiences as small wins. This metaphorically has a similar effect to motivating constructive actions (Gielnik et al., 2015) within the motivation–opportunity nexus (Elfving et al., 2017) moving students towards retention (or idea execution). These positive impressions towards entrepreneurial behaviour increase the chance of employing a favourable bias over time, encouraging students to retain the skills and decision policies to test their assumptions (Haynie, Shepherd, & McMullen, 2009) or to follow effectuation where they perceive the losses as inevitable yet affordable costs of doing business (Goel & Karri, 2006) even after EE. This situation inevitably equates the case where students are measured to maintain a high level of intention to act or EI in entrepreneurship literature after education. Alternatively, students with low EII may suffer from inaction decisions lowering the odds of action on future business ideas and may lead to “a trajectory of continued dismissal of positive value opportunities” (Wood et al., 2017, p.123). Therefore:

*Entrepreneurial implementation intention (EII<sub>1</sub>) will moderate the stability of entrepreneurial goal intentions (EGI<sub>1</sub> and EGI<sub>2</sub>).*

### **3. Methodology**

#### *3.1 Survey design and administration*

By examining the curricula of universities in Vietnam, 16 undergraduate programmes (14 Business Management; two Engineering) were identified. All programmes offered one module/course on EE conducted in English lasting at least three months (or 48 contact hours) before students undertook the final year. The common objectives of the EE module/course in these programmes were to introduce fundamental theories of entrepreneurship and provide students with tools that would assist in devising a business plan such as the Business Model

Canvas (Osterwalder & Pigneur, 2010). To minimise chances of common method variance, duplicate paper and online questionnaires were employed, available in either the English or Vietnamese languages. The questionnaire was designed using measurement items grounded in the literature (Chen et al., 1998; Liñán & Chen, 2009). The measures employed here were adopted from existing scales (Appendix 1), but modifications were made to adapt to the case of students. All items (unless otherwise indicated) were measured employing a five-point Likert scale ranging from one representing “strongly disagree” to five representing “strongly agree”. The students, through convenience sampling, were asked to complete the questionnaire during a compulsory Entrepreneurship course and approximately one year after the course.

A compulsory entrepreneurship course eliminates the possibility of self-selection into entrepreneurship by students reducing excessive subjective assessment of the effects of EE on EI (Henry et al., 2005; Oosterbeek et al., 2010; Von Graevenitz et al., 2010). The majority of students (74 per cent) within the sample were based in Southern Vietnam, where the development of private enterprises is concentrated (Baughn et al., 2006). The sample was divided between males (57 per cent) and females (43 per cent); 88 per cent and 12 per cent of the participants studied a Business Management and Engineering degree, respectively. The age of the sample ranged from 18 to 25 years (100 per cent), which was appropriate for this study, as during these ages individuals actively develop occupational aspirations by considering either seeking employment opportunities or undertaking business start-up (Nabi et al., 2006). Data on prior experience of all students were: (time 1) mean = 0.264 (max=1), SD = 0.184; and (time 2) mean = 0.266 (max=1); SD = 0.186. This calculation was based on Davidsson and Honig’s (2003) 4-item scale (Yes=0.25/No=0) indicating access to social and human capital.

### *3.2 Measures*

#### *Dependent Variables*

*Entrepreneurial Goal Intention (EGI)*. This variable was measured using a six-item scale developed by Liñán and Chen (2009). A sample item asks: “Have you ever seriously considered becoming an entrepreneur?”.

#### *Independent Variables*

*Entrepreneurial Implementation Intention (EII)*. This variable was measured using a 22-item scale developed by Chen, Greene, and Crick (1998). Although the items were originally used to reflect five categories of Entrepreneurial Self-Efficacy, the categories are suitable for assessing EII on the ground of planning of various entrepreneurial activities in the near future. There have been several inconsistencies in the use of measurement scales for EII across the literature. For example, some authors such as Bagozzi et al., (2003) and Esfandiar et al. (2019) use their own two or three items to measure EII such as (I am determined to create my own or co-owned business in the near future; I have very seriously thought of starting a firm; The probability of starting my own or co-owned business is high in the next 3 years). Similarly, Van Gelderen et al. (2007) adopt three items created by Ziegelmann et al. (2007) and adapt to the context of new venture creation (I have already planned precisely what I will do as my first step to starting a business; I have already planned precisely when to engage in my first step to starting a business; and I have already planned precisely where to engage in my first step to starting a business). Under the context of the academy, this research finds that there needs to be a broader range of entrepreneurial activities to be covered based on the knowledge and the different business areas taught in class for EII to be meaningful. As a result, this research does not take for granted the self-efficacy items as measuring the implementation goal intention but instead the wide range of activities in its inventory. The survey instructions, therefore,

specifically asked participants to rate the importance and urgency of those tasks during the entrepreneurial process to emphasise EII (Urban, 2006) (i.e. what tasks they *will do* or *are performing* to progress with their business idea in this study).

### *Control Variables*

Consistent with prior studies (Dheer & Lenartowicz, 2016; Liñán & Rodríguez-Cohard, 2015), six control variables were considered in the analyses: gender (Male; Female), age (18-25 years; 26-45 years; 46-60 years; 60 years or above), programme of studies (Business Administration; Computer Science or Engineering; Other), name of institution, entrepreneurship course availability (within one year), and entrepreneurial experience (Social Capital; Human Capital) to reduce the possibility of alternative explanations over a period.

### *3.3 Analytical methods*

This study followed a two-step approach, including measurement of invariance and a multigroup analysis, to test the hypothesised moderating effects of  $EII_1$  on the relationship between the  $EGI_1$  and  $EGI_2$  (Hulland, 1999). Following recent research on EI (Fretschner & Weber, 2013; Giacomini et al., 2016; Kautonen et al., 2011; Miralles et al., 2016; Shinnar et al., 2014), Partial Least Squares (SEM-PLS) path modelling was employed. The PLS approach was appropriate as it made minimal demands concerning measurement scales, sample size and residual redistributions (Wold, 1985). The multigroup analysis (MGA) in SmartPLS allowed the study to test if the pre-defined data groups had significant differences in their group-specific parameter estimates e.g., outer weights, outer loadings and path coefficients (Sarstedt et al., 2011).

#### 4. Multigroup Analysis and Results

To ensure meaningful results, measurement invariance across the two groups of high EII and low EII during EE is confirmed following a test using MICOM approach in Smart PLS (Henseler, Ringle, & Sarstedt, 2016). This guide suggests that either configural invariance or compositional invariance must be established before proceeding with the PLS-MGA. The compositional invariance should confirm the similarity between the two groups of students in terms of the data treatment for the measurement, the structural model and the algorithm settings. The purpose of this procedure was to compare the original score correlations  $c$  against the empirical distribution of the score correlations obtained through the permutation process ( $c_u$ ). In case  $c$  exceeds the 5% quantile of  $c_u$ , a compositional invariance can be confirmed (Schlängel & Sarstedt, 2016). Once either of these two types of invariance is confirmed, the research may proceed with a PLS-MGA test (see Table 1 for details).

[Table 1 Here]

Following the measurement of invariance, multigroup analysis (MGA) was conducted to further test the hypothesis using SmartPLS 3. The dataset was divided into two subsamples characterised by High EII<sub>1</sub> (Group 1/n=213) and Low EII<sub>1</sub> (Group 2/n=199) as the upper above and lower half below the median respectively.

Table 2 illustrates the coefficients of each hypothesised path and corresponding path coefficients difference (PCD). The significant difference of PCD (EGI<sub>1</sub>xEII<sub>1</sub> → EGI<sub>2</sub>) between two groups of high and low EII<sub>1</sub> was supported meaning that the moderating effects of EII on the transition between EGI<sub>1</sub> and EGI<sub>2</sub> were stronger for the group of high EII. These results overall supported the hypothesis and highlighted the importance of the time construct.

[Table 2 Here]

## **5. Discussion and Conclusion**

Through data analysis, the study confirms the variation in EGI in prior studies following EE (Souitaris et al., 2007; Weber, 2012). For example, the finding agrees with Esfandiara et al's (2019) suggestion of desirability as the primary driver of EGI during EE. However, the study shows its commonality with Von Graevenitz et al's (2010) claim that variation in the intentions after EE is unlikely for students if their perceived pre-course feasibility of starting a business is strong and consistent (e.g. consistently negative or positive). A possible explanation is that these students may possess either high or low EII. During the EE course, the group with high EII, for example, is more susceptible to the environmental cues to retain the goal intensity over the sensemaking than are those who have low EII. The finding adds evidence to the phenomenon that if students consider themselves part of a group having a strong fit with entrepreneurship, entrepreneurial intention can be strongly predicted by entrepreneurial self-efficacy (Hsu et al., 2019).

Alternatively, prior research has occasionally suggested signs of a neutral or even a negative relationship between EE and EI (Krueger & Brazeal, 1994; Oosterbeek et al., 2010; Von Graevenitz et al., 2010). The reverse causation takes its impetus from the assumption that various factors/motivational antecedents influence the real effectiveness of EE on EI (Fayolle & Gailly, 2015; Martin et al., 2013). For example, Oosterbeek et al (2010) advocate a decrease in EI after participating in EE due to students potentially having obtained more realistic perspectives on themselves and what it takes to be an entrepreneur. Although EE enhances EGI, it may not be positively prolonged amongst low EII students due to their difficulties in moving

along the loop of sensemaking to sustain the intensity, which supports the hypothesis in this study. The results, however, specifically suggest EGI remains relatively stable for the group of high EII after EE contrasting with Oosterbeek's (2010) findings. Souitaris et al (2007) further connect EI to the construct of emotions to prove the significant positive impact of EE on EI among students; although, such an effect was only found close to the time of EE provision in the study. Since emotions are volatile and contagious (Foo, 2011), the increase in EGI at  $t_1$  might be accounted for by the transmission of positive emotion on entrepreneurship between both high and low EII students during the EE experience (Baron, 2004). Positive emotions have a positive effect on motivation to engage students in actions at the subsequent time (Bandura, 1997; Gielnik et al., 2015; Carver & Scheier, 1990). However, those students with low EII may find themselves interacting within a local group and become less prone to take actions after the EE is offered. Here, high  $EGI_1$  may potentially transition into low  $EGI_2$ , which will ultimately lead to a drop in the level of positive emotions, and, hence, a decrease in or even negative impacts on EGI over time considered from a view of the mere-exposure effects (Zajonc, 1968).

This research contributes to the theoretical conceptualisation of the effect of EII on EGI (Bagozzi et al., 2003; Elfving et al., 2017; Esfandiara et al., 2019; Krueger, 2017) under the context of the academy (Henry et al., 2004; Kailer, 2005). It highlights the non-linear assessment of EI over a period allowing behaviour and variations in individual belief to occur through both irrational and logical intention-behaviour views. By drawing on the transition between goal intention and implementation intention, emphasising their intertwined nature in constituting EI (Fayolle & Liñán, 2014, Gollwitzer, 1993), the study highlights the need to consider a combination of multiple anticipatory and adaptive intentions and subsequent behaviours in assessing EI during the entrepreneurial process considered through a



sensemaking lens. EII has been found to more effectively result in actions enabling the opportunity development process and is more common amongst students with high EII. Through this, a more comprehensive picture of the entrepreneurial process is delineated; and the role of both time- and space-related constructs (environmental conditions, knowledge structure, individual beliefs, and time) is highlighted to raise academic awareness in this “transformative process by which desires become goals, actions, and systemic outcomes” (McMullen & Dimov, 2013, p.1482).

At the practical level, this research confirms the positive effects of EE on EI, especially when EII is appropriately utilised. The result promotes confidence in investing in EE and training programmes among governments, universities as well as public and private organisations. Since entrepreneurs’ cognitions are similar across different cultures and contexts (Mitchell et al., 2000), studying such a sample of students in Vietnam provides increased knowledge and understanding regarding the various aspects of EE enabling global comparisons (Pham, 2018). Typically, recent literature has promoted an experiential pedagogical design that engages students in experimentation and practice to be effective. These involve undertaking business start-up, design-based thinking, and business simulations (Kriz & Auchter, 2016; Neck & Greene, 2011). However, these approaches are not widespread in both developed and developing countries given lack of favourable learning conditions, university support and local business environment (Klapper & Neergaard, 2017). As such, under a wide range of context settings, EE only temporarily permits opportunities to appear more vivid and subside with time as non-entrepreneurial knowledge is later added to the students’ mental structure.

To improve the general level of EI, educators are advised to avoid taking a causal approach to EE, and instead, to engage students in an experiential process over a period of time through which repetition and experimentation “increase an entrepreneur’s confidence in certain actions

and improve the content of her/his stock of knowledge” (Minniti & Bygrave, 2001, p.7). To take advantage of students’ EII, time should be given during the education process, allowing them to absorb and stabilise their propensity and take action towards business start-up. The practical experience gained from entrepreneurial activities over the provision of EE, despite only being approximate and small to the real world, may assist students to test the veracity of their interests, discover their true abilities in entrepreneurship, and as a result, more effectively shape their future career towards self-employment. Students may benefit from pedagogies that focus on EII to guide them through a multi-functional implementation process (Liñán, 2007), or better yet, to set up a mini-business throughout the course (Rodrigues et al., 2012). Here the emphasis is on enabling mindset development (Heinonen & Poikkijoki, 2006), for example, creative problem-solving (Camacho et al., 2016) and behavioural training games (Johnsson et al., 2016), which can potentially lead to a systematic improvement in positive attitude towards entrepreneurship over time (Jones et al., 2017; Maas & Jones, 2015). Thus, developments in valid quantitative measures to be unidimensional and applicable across a broad range of contexts for traditional frameworks such as effectuation and entrepreneurial bricolage (Davidsson et al., 2017) also signals an opportunity for research moving forward the promotion of an entrepreneurial mindset among students and students’ engagement within a wider societal context.

As every research, also this study has limitations that provide future research opportunities. Due to limited time and access, data was collected on only two occasions ( $t_1$  and  $t_2$ ) on the treatment groups (students having been offered a compulsory introductory EE course), the study is unable to fully identify the exact patterns of changes in students’ EI over a period. Since the study also found EI as a process that unfolds over time, further research may employ time series data on various control and treatment groups to provide further evidence. Qualitative methods (e.g.,

interpretative phenomenological analysis; Smith et al., 2012) focussing on the significance of individuals' lived experiences can also be combined to provide a richer exposition of the process by which students make sense of, form and preserve their intentions both before and whilst performing entrepreneurial behaviour.

Using a sensemaking approach to entrepreneurship, this research draws a distinction between EGI and EII and their transition, which together constitutes entrepreneurial intentions. The results suggest the effects of EE on EI vary over time and space depending on several contextual factors. EGI (or in the study: individual beliefs towards an entrepreneurial goal) is more a situated construct affected by the environmental conditions (EE) and temporality. The availability of EE has a significant positive effect on EGI. However, the intention may subside gradually if not nurtured, perhaps with a sufficient level of entrepreneurial behavioural engagement (or EII) or further EE over time. Such a situation provides academics with both challenges and opportunities in helping students form and develop stable EI in the long term. To nurture EI, EE educators may encourage students to engage in "small" everyday actions and develop an action-oriented mindset that provides them with opportunities to increase their overall confidence leading to a more favourable level of EI over the long term. By identifying that the term "entrepreneurial intentions" typically accounts only for the first phase of goal intention (Adam & Fayolle, 2016, p.81) in entrepreneurship literature, this research invites a more systematic approach to literature reviews that are more objective, structured, transparent and reproducible compared to traditional literature reviews (Kraus et al., 2020). Future research might employ qualitative methods in assessing the link between EE, EI, and subsequent actions. This can be done through investigating whether entrepreneurship courses and learning environments would have various effects on EI among students; and whether the micro- and macro-environment in different country contexts significantly influence the behaviours.

## References

- Adam, A. F., & Fayolle, A. (2016). Can implementation intention help to bridge the intention–behaviour gap in the entrepreneurial process? An experimental approach. *The International Journal of Entrepreneurship and Innovation*, 17(2), 80-88.
- Ahmed, T., Chandran, V. G. R., & Klobas, J. (2017). Specialized entrepreneurship education: does it really matter? Fresh evidence from Pakistan. *International Journal of Entrepreneurial Behavior & Research*, 23(1), 4-19.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211.
- Alvarez, S. A., Barney, J. B., & Anderson, P. (2013). Forming and exploiting opportunities: The implications of discovery and creation processes for entrepreneurial and organizational research. *Organization Science*, 24(1), 301-317.
- Bae, T. J., Qian, S., Miao, C., & Fiet, J. O. (2014). The Relationship between Entrepreneurship Education and Entrepreneurial Intentions: A Meta–Analytic Review. *Entrepreneurship Theory and Practice*, 38(2), 217-254.
- Bagozzi, R. P., Dholakia, U. M., & Basuroy, S. (2003). How effortful decisions get enacted: The motivating role of decision processes, desires, and anticipated emotions. *Journal of Behavioral Decision Making*, 16(4), 273-295.
- Bakker, R. M., & Shepherd, D. A. (2017). Pull the plug or take the plunge: Multiple opportunities and the speed of venturing decisions in the Australian mining industry. *Academy of Management Journal*, 60(1), 130-155.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: Freeman.
- Baron, R. A. (2004). The cognitive perspective: a valuable tool for answering entrepreneurship's basic “why” questions. *Journal of Business Venturing*, 19(2), 221-239.
- Baron, R. A. (2006). Opportunity recognition as pattern recognition: How entrepreneurs “connect the dots” to identify new business opportunities. *Academy of Management Perspectives*, 20(1), 104-119.
- Baughn, C. C., Cao, J. S., Le, L. T. M., Lim, V. A., & Neupert, K. E. (2006). Normative, social and cognitive predictors of entrepreneurial interest in China, Vietnam and the Philippines. *Journal of Developmental Entrepreneurship*, 11(1), 57-77.
- Becker, S.G. (1975). *Human Capital* (2nd ed). Chicago, IL: University of Chicago Press.
- Benzing, C., Chu, H. M., & Callanan, G. (2005). A regional comparison of the motivation and problems of Vietnamese entrepreneurs. *Journal of Developmental Entrepreneurship*, 10(01), 3-27.
- Bird, B. (1988). Implementing entrepreneurial ideas: The case for intention. *Academy of Management Review*, 13(3), 442-453.
- Bollen, K., & Lennox, R. (1991). Conventional wisdom on measurement: A structural equation perspective. *Psychological Bulletin*, 110(2), 305-314.
- Bornstein, R. F. (1989). Exposure and affect: overview and meta-analysis of research, 1968–1987. *Psychological Bulletin*, 106(2), 265-289.
- Botsaris, C., & Vamvaka, V. (2016). Attitude toward entrepreneurship: structure, prediction from behavioral beliefs, and relation to entrepreneurial intention. *Journal of the Knowledge Economy*, 7(2), 433-460.
- Breslin, D. (2011). Reviewing a Generalized Darwinist Approach to Studying Socio-economic Change. *International Journal of Management Reviews*, 13(2), 218-235.
- Breslin, D. (2017). Learning to Evolve: Increasing Entrepreneurial Self-Efficacy and Putting the Market First. In *Entrepreneurship Education: New Perspectives on Entrepreneurship Education* (pp. 17-45). Emerald Publishing Limited.

- Camacho, A. P., Janowski, A., Konak, A., & Kulturel-Konak, S. (2016, March). Creative problem-solving builds entrepreneurial mindset. In *Integrated STEM Education Conference (ISEC) 2016 IEEE* (pp. 65-70). IEEE.
- Campbell, T.D. (1965). Variation and selective retention in socio-cultural evolution. In: Barringer, R.H, Blanksten, G.I and Mack, W.R (eds) *Social change in developing areas: A Reinterpretation of Evolutionary Theory 19*. Cambridge, MA: Schenkman Publishing Company. Pp. 26-27.
- Carver, C. S., & Scheier, M. F. (1990). Origins and functions of positive and negative affect: A control-process view. *Psychological Review*, 97(1), 19-35.
- Chen, C. C., Greene, P. G., & Crick, A. (1998). Does entrepreneurial self-efficacy distinguish entrepreneurs from managers?. *Journal of business venturing*, 13(4), 295-316.
- Cooper, D., Peake, W., & Watson, W. (2016). Seizing Opportunities: The Moderating Role of Managerial Characteristics on the Relationship between Opportunity-Seeking and Innovation Efficacy in Small Businesses. *Journal of Small Business Management*, 54(4), 1038-1058.
- Corbett, A. C. (2005). Experiential learning within the process of opportunity identification and exploitation. *Entrepreneurship Theory and Practice*, 29(4), 473-491.
- Davidsson, P., & Honig, B. (2003). The role of social and human capital among nascent entrepreneurs. *Journal of Business Venturing*, 18(3), 301-331.
- Davidsson, P., Baker, T., & Senyard, J. M. (2017). A measure of entrepreneurial bricolage behavior. *International Journal of Entrepreneurial Behavior & Research*, 23(1), 114-135.
- Dheer, R. J., & Lenartowicz, T. (2016). Multiculturalism and entrepreneurial intentions: Understanding the mediating role of cognitions. *Entrepreneurship Theory and Practice*.
- Dobson, S., Breslin, D., Suckley, L., Barton, R., & Rodriguez, L. (2013). Small firm survival and innovation: An evolutionary approach. *International Journal of Entrepreneurship and Innovation*, 14(2), 69-80.
- Elfving, J., Brännback, M., & Carsrud, A. (2017). Revisiting a contextual model of entrepreneurial intentions. In *Revisiting the Entrepreneurial Mind* (pp. 83-90). Springer, Cham.
- Elston, J. A., & Weidinger, A. (2019). Entrepreneurial intention and regional internationalization in China. *Small Business Economics*, 53(4), 1001-1015.
- Emami, A., & Dimov, D. (2017). Degree of innovation and the entrepreneurs' intention to create value: a comparative study of experienced and novice entrepreneurs. *Eurasian Business Review*, 7(2), 161-182.
- Esfandiar, K., Sharifi-Tehrani, M., Pratt, S., & Altinay, L. (2019). Understanding entrepreneurial intentions: A developed integrated structural model approach. *Journal of Business Research*, 94(2019), 172-182.
- 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.
- Ferreira, J. J., Fernandes, C. I., & Kraus, S. (2019). Entrepreneurship research: mapping intellectual structures and research trends. *Review of Managerial Science*, 13(1), 181-205.
- Festinger, L. (1957). *A Theory of Cognitive Dissonance*. Redwood City, CA: Stanford University Press.
- Fitzsimons, G. M., Chartrand, T. L., & Fitzsimons, G. J. (2008). Automatic effects of brand exposure on motivated behavior: how apple makes you "think different". *Journal of Consumer Research*, 35(1), 21-35.

- Foo, M. D. (2011). Emotions and entrepreneurial opportunity evaluation. *Entrepreneurship Theory and Practice*, 35(2), 375-393.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 39-50.
- Fretschner, M., & Weber, S. (2013). Measuring and understanding the effects of entrepreneurial awareness education. *Journal of Small Business Management*, 51(3), 410-428.
- Gavetti, G., & Rivkin, J. W. (2005). How strategists really think. *Harvard Business Review*, 83(4), 54-63.
- Giacomin, O., Janssen, F., & Shinnar, R. S. (2016). Student entrepreneurial optimism and overconfidence across cultures. *International Small Business Journal*, 34(7), 925-947.
- Gielnik, M. M., Spitzmuller, M., Schmitt, A., Klemann, D. K., & Frese, M. (2015). "I put in effort, therefore I am passionate": Investigating the path from effort to passion in entrepreneurship. *Academy of Management Journal*, 58(4), 1012-1031.
- Goel, S., & Karri, R. (2006). Entrepreneurs, effectual logic, and over-trust. *Entrepreneurship Theory and Practice*, 30(4), 477-493.
- Gollwitzer, P. M. (1990). Action phases and mind-sets. *Handbook of motivation and cognition: Foundations of Social Behavior*, 2, 53-92.
- Gollwitzer, P. M. (1993). Goal achievement: The role of intentions. *European Review of Social Psychology*, 4(1), 141-185.
- Gollwitzer, P. M., & Sheeran, P. (2006). Implementation intentions and goal achievement: A meta-analysis of effects and processes. *Advances in Experimental Social Psychology*, 38, 69-119.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis* (Vol. 6). NJ: Prentice Hall.
- Haynie, J. M., Shepherd, D. A., & McMullen, J. S. (2009). An opportunity for me? The role of resources in opportunity evaluation decisions. *Journal of Management Studies*, 46(3), 337-361.
- Heinonen, J., & Poikkijoki, S. A. (2006). An entrepreneurial-directed approach to entrepreneurship education: mission impossible?. *Journal of Management Development*, 25(1), 80-94.
- Henry, C., Hill, F. M., & Leitch, C. M. (2004). The effectiveness of training for new business creation: a longitudinal study. *International Small Business Journal*, 22(3), 249-271.
- Henry, C., Hill, F., & Leitch, C. (2005). Entrepreneurship education and training: can entrepreneurship be taught? Part II. *Education+ Training*, 47(3), 158-169.
- Hill, S. A., & Birkinshaw, J. M. (2010). Idea sets: Conceptualizing and measuring a new unit of analysis in entrepreneurship research. *Organizational Research Methods*, 13(1), 85-113.
- Hulland, J. (1999). Use of partial least squares (PLS) in strategic management research: A review of four recent studies. *Strategic Management Journal*, 20(2), 195-204.
- Ilonen, S., Heinonen, J., & Stenholm, P. (2018). Identifying and understanding entrepreneurial decision-making logics in entrepreneurship education. *International Journal of Entrepreneurial Behavior & Research*, 24(1), 59-80.
- Johnsson, C., Suoranta, M., Sidhu, I., & Singer, K. (2016, September). On Using Games for Practicing Entrepreneurial Mindset. In *European Conference on Innovation and Entrepreneurship* (p. 336). Academic Conferences International Limited.
- Jones, P., Mass, G., & Pittaway, L. (2017). *Entrepreneurship Education: New Perspectives on Research, Policy & Practice*. Bingley, UK: Emerald Group Publishing.
- Kailer, N. (2005). Evaluation of entrepreneurship education at universities. *Ibw-Mitteilungen*, 3, 1-11.

- Kaish, S., & Gilad, B. (1991). Characteristics of opportunities search of entrepreneurs versus executives: Sources, interests, general alertness. *Journal of Business Venturing*, 6(1), 45-61.
- Karimi, S., Biemans, H. J., Lans, T., Chizari, M., & Mulder, M. (2016). The impact of entrepreneurship education: A study of Iranian students' entrepreneurial intentions and opportunity identification. *Journal of Small Business Management*, 54(1), 187-209.
- Kautonen, T., van Gelderen, M., & Fink, M. (2015). Robustness of the theory of planned behavior in predicting entrepreneurial intentions and actions. *Entrepreneurship Theory and Practice*, 39(3), 655-674.
- Kautonen, T., Tornikoski, E. T., & Kibler, E. (2011). Entrepreneurial intentions in the third age: the impact of perceived age norms. *Small Business Economics*, 37(2), 219-234.
- Kim, W. C., & Mauborgne, R. (1998). Value innovation: the strategic logic of high growth. *IEEE Engineering Management Review*, 26(2), 8-16.
- Klapper, R.G., & Neergaard, H. (2017). Teaching Entrepreneurship as Lived Experience Through 'Wonderment Exercises'. In: Jones, P., Maas, G., & Pittaway, L. (eds) *Contemporary Issues in Entrepreneurship Research (Entrepreneurship Education: New perspectives on Research, Policy & Practice Volume 7)*. Bingley, UK: Emerald Group Publishing. Pp. 145-170.
- Klayman, J., & Ha, Y. W. (1989). Hypothesis testing in rule discovery: Strategy, structure, and content. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 15(4), 596-604.
- Kolb, D. (1984). *Experiential education: Experience as the source of learning and development*. Englewood Cliffs, NJ.
- Kraus, S., Breier, M., & Dasí-Rodríguez, S. (2020). The art of crafting a systematic literature review in entrepreneurship research. *International Entrepreneurship and Management Journal*, 1-20.
- Kriz, W. C., & Auchter, E. (2016). 10 Years of Evaluation Research Into Gaming Simulation for German Entrepreneurship and a New Study on Its Long-Term Effects. *Simulation & Gaming*, 47(2), 179-205.
- Krueger, N. F. (2017). Entrepreneurial intentions are dead: Long live entrepreneurial intentions. In *Revisiting the entrepreneurial mind* (pp. 13-34). Springer, Cham.
- Krueger Jr, N. F., & Brazeal, D. V. (1994). Entrepreneurial potential and potential entrepreneurs. *Entrepreneurship Theory and Practice*, 18(3), 91-104.
- Krueger, N. F., & Carsrud, A. L. (1993). Entrepreneurial intentions: applying the theory of planned behaviour. *Entrepreneurship & Regional Development*, 5(4), 315-330.
- Kunda, Z. (1987). Motivated inference: Self-serving generation and evaluation of causal theories. *Journal of Personality and Social Psychology*, 53(4), 636.
- Lerner, D. A., Hunt, R. A., & Dimov, D. (2018). Action! Moving beyond the intendedly-rational logics of entrepreneurship. *Journal of Business Venturing*, 33(1), 52-69.
- 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., & 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.
- Liñán, F., Santos, F. J., & Fernández, J. (2011). The influence of perceptions on potential entrepreneurs. *International Entrepreneurship and Management Journal*, 7(3), 373.
- Maas, G., & Jones, P. (2015). *Systemic Entrepreneurship: Contemporary Issues and Case Studies*. Springer.

- Markides, C. (2000). *All the right moves: a guide to crafting breakthrough strategy*. Harvard Business Press.
- Martijn, C., Alberts, H., Sheeran, P., Peters, G. J. Y., Mikolajczak, J., & De Vries, N. K. (2008). Blocked goals, persistent action: Implementation intentions engender tenacious goal striving. *Journal of Experimental Social Psychology, 44*(4), 1137-1143.
- Martin, B. C., McNally, J. J., & Kay, M. J. (2013). Examining the formation of human capital in entrepreneurship: A meta-analysis of entrepreneurship education outcomes. *Journal of Business Venturing, 28*(2), 211-224.
- McMullen, J. S., & Dimov, D. (2013). Time and the entrepreneurial journey: The problems and promise of studying entrepreneurship as a process. *Journal of Management Studies, 50*(8), 1481-1512.
- Minniti, M., & Bygrave, W. (2001). A dynamic model of entrepreneurial learning. *Entrepreneurship Theory and Practice, 25*(3), 5-16.
- Miralles, F., Giones, F., & Riverola, C. (2016). Evaluating the impact of prior experience in entrepreneurial intention. *International Entrepreneurship and Management Journal, 12*(3), 791-813.
- Mitchell, R. K., Smith, B., Seawright, K. W., & Morse, E. A. (2000). Cross-cultural cognitions and the venture creation decision. *Academy of Management Journal, 43*(5), 974-993.
- Moriano, J. A., Gorgievski, M., Laguna, M., Stephan, U., & Zarafshani, K. (2012). A cross-cultural approach to understanding entrepreneurial intention. *Journal of Career Development, 39*(2), 162-185.
- Nabi, G., Holden, R., & Walmsley, A. (2006). Graduate career-making and business start-up: a literature review. *Education+ Training, 48*(5), 373-385.
- Nabi, G., Walmsley, A., Liñán, F., Akhtar, I., & Neame, C. (2018). Does entrepreneurship education in the first year of higher education develop entrepreneurial intentions? The role of learning and inspiration. *Studies in Higher Education, 43*(3), 452-467.
- Neck, H. M., & Greene, P. G. (2011). Entrepreneurship education: known worlds and new frontiers. *Journal of Small Business Management, 49*(1), 55-70.
- Oosterbeek, H., Van Praag, M., & Ijsselstein, A. (2010). The impact of entrepreneurship education on entrepreneurship skills and motivation. *European Economic Review, 54*(3), 442-454.
- Osterwalder, A., & Pigneur, Y. (2010). *Business model generation: a handbook for visionaries, game changers, and challengers*. Hoboken: John Wiley & Sons.
- Palmer, C., Fasbender, U., Kraus, S., Birkner, S., & Kailer, N. (2019). A chip off the old block? The role of dominance and parental entrepreneurship for entrepreneurial intention. *Review of Managerial Science, 1*-21.
- Peterman, N. E., & Kennedy, J. (2003). Enterprise education: Influencing students' perceptions of entrepreneurship. *Entrepreneurship Theory and Practice, 28*(2), 129-144.
- Peterson, B. K., & Wong-On-Wing, B. (2000). An examination of the positive test strategy in auditors' hypothesis testing. *Behavioral Research in Accounting, 12*, 257-277.
- Pfeifer, S., Šarlija, N., & Zekić Sušac, M. (2016). Shaping the Entrepreneurial Mindset: Entrepreneurial Intentions of Business Students in Croatia. *Journal of Small Business Management, 54*(1), 102-117.
- Pham, D. (2018). Contemporary issues in entrepreneurship research volume 7: Entrepreneurship education: New perspectives on research, policy & practice. *International Journal of Entrepreneurial Behavior & Research, 24*(1), 317-319.
- Piperopoulos, P., & Dimov, D. (2015). Burst bubbles or build steam? Entrepreneurship education, entrepreneurial self-efficacy, and entrepreneurial intentions. *Journal of Small Business Management, 53*(4), 970-985.



- Politis, D., & Gabrielsson, J. (2009). Entrepreneurs' attitudes towards failure: An experiential learning approach. *International Journal of Entrepreneurial Behavior & Research*, 15(4), 364-383.
- Prestwich, A., Sheeran, P., Webb, T. L., & Gollwitzer, P. M. (2015). Implementation intentions. *Predicting Health Behavior*, 3, 321-357.
- Ribeiro-Soriano, D., & Kraus, S. (2018). An overview of entrepreneurship, innovation and sensemaking for improving decisions. *Group Decision and Negotiation*, 27(3), 313-320.
- Robinson, J. P., Shaver, P. R., & Wrightsman, L. S. (1991). Criteria for scale selection and evaluation. *Measures of Personality and Social Psychological Attitudes*, 1(3), 1-16.
- Rodrigues, R. G., Dinis, A., do Paço, A., Ferreira, J., & Raposo, M. (2012). The effect of an entrepreneurial training programme on entrepreneurial traits and intention of secondary students. In *Entrepreneurship-born, made and educated*. InTech.
- Sarstedt, M., Henseler, J., & Ringle, C. M. (2011). Multigroup analysis in partial least squares (PLS) path modelling: Alternative methods and empirical results. In *Measurement and research methods in international marketing*, 195-218. Emerald Group Publishing Limited.
- Schjoedt, L., & Craig, J. B. (2017). Development and validation of a unidimensional domain-specific entrepreneurial self-efficacy scale. *International Journal of Entrepreneurial Behavior & Research*, 23(1), 98-113.
- Schlägel, C., & Sarstedt, M. (2016). Assessing the measurement invariance of the four-dimensional cultural intelligence scale across countries: A composite model approach. *European Management Journal*, 1-17.
- Schwarz, N., & Vaughn, L. A. (2002). The availability heuristic revisited: Ease of recall and content of recall as distinct sources of information. In T. Gilovich, D. Griffin, & D. Kahneman (Eds.), *Heuristics and biases: The psychology of intuitive judgment* (pp. 103-119). New York, NY, US: Cambridge University Press.
- Schwarz, N., Bless, H., Strack, F., Klumpp, G., Rittenauer-Schatka, H., & Simons, A. (1991). Ease of retrieval as information: another look at the availability heuristic. *Journal of Personality and Social Psychology*, 61(2), 195-202.
- Shane, S., & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. *Academy of Management Review*, 25(1), 217-226.
- Shane, S. A. (2003). *A general theory of entrepreneurship: The individual-opportunity nexus*. Cheltenham: Edward Elgar Publishing.
- Shapero, A., & Sokol, L. (1982). The social dimensions of entrepreneurship. *Encyclopedia of entrepreneurship*, 72-90.
- Shepherd, D. A., Haynie, J. M., & McMullen, J. S. (2012). Confirmatory search as a useful heuristic? Testing the veracity of entrepreneurial conjectures. *Journal of Business Venturing*, 27(6), 637-651.
- Shepherd, D. A., Williams, T. A., & Patzelt, H. (2015). Thinking about entrepreneurial decision making: Review and research agenda. *Journal of Management*, 41(1), 11-46.
- Shepherd, D. A. (2015). Party On! A call for entrepreneurship research that is more interactive, activity based, cognitively hot, compassionate, and prosocial. *Journal of Business Venturing*, 30(4), 489-507.
- Shinnar, R. S., Hsu, D. K., & Powell, B. C. (2014). Self-efficacy, entrepreneurial intentions, and gender: Assessing the impact of entrepreneurship education longitudinally. *The International Journal of Management Education*, 12(3), 561-570.
- Shook, C. L., Priem, R. L., & McGee, J. E. (2003). Venture creation and the enterprising individual: A review and synthesis. *Journal of Management*, 29(3), 379-399.
- Sinkovics, R. R., Henseler, J., Ringle, C. M., & Sarstedt, M. (2016). Testing measurement invariance of composites using partial least squares. *International marketing review*.

- Smith, J., Flowers, P., & Larkin, M. (2009). *Interpretative Phenomenological Analysis: theory, method and research*, London Sage.
- 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.
- Turker, D., & Sonmez Selçuk, S. (2009). Which factors affect entrepreneurial intention of university students?. *Journal of European Industrial Training*, 33(2), 142-159.
- Tversky, A. & Kahneman, D. (1975). Judgment under uncertainty: Heuristics and biases. In: Eberlein, G., & Leinfellner, W. (eds) *Utility, probability, and human decision making* 11, 141-162. Dordrecht, The Netherlands: Springer.
- Ulrich, T. A., & Cole, G. S. (1987). Toward more effective training of future entrepreneurs. *Journal of Small Business Management*, 25(4), 32-39.
- Urban, B. (2006). Entrepreneurship in the rainbow nation: Effect of cultural values and ESE on intentions. *Journal of Developmental Entrepreneurship*, 11(3), 171-186.
- 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.
- Van Gelderen, M., Kautonen, T., Wincent, J., & Biniari, M. (2018). Implementation intentions in the entrepreneurial process: concept, empirical findings, and research agenda. *Small Business Economics*, 51(4), 923-941.
- Von Graevenitz, G., Harhoff, D., & Weber, R. (2010). The effects of entrepreneurship education. *Journal of Economic Behavior & Organization*, 76(1), 90-112.
- Van Gelderen, M., Kautonen, T., Wincent, J., & Biniari, M. (2018). Implementation intentions in the entrepreneurial process: concept, empirical findings, and research agenda. *Small Business Economics*, 51(4), 923-941.
- Wason, P. C. (1960). On the failure to eliminate hypotheses in a conceptual task. *Quarterly Journal of Experimental Psychology*, 12(3), 129-140.
- Weber, R. (2012). *Evaluating Entrepreneurship Education*. Berlin, Germany: Springer Science & Business Media.
- Weick, E. K. (1979). *The social Psychology of Organizing*. Reading, UK: Addison-Wesley.
- Weick, K. E., Sutcliffe, K. M., & Obstfeld, D. (2005). Organizing and the process of sensemaking. *Organization Science*, 16(4), 409-421.
- Welter, F., Baker, T., Audretsch, D. B., & Gartner, W. B. (2017). Everyday entrepreneurship—a call for entrepreneurship research to embrace entrepreneurial diversity, *Entrepreneurship Theory and Practice* 41(3), 311-321.
- Werner, A., Gast, J., & Kraus, S. (2014). The effect of working time preferences and fair wage perceptions on entrepreneurial intentions among employees. *Small Business Economics*, 43(1), 137-160.
- Wold, H. (1985). Partial least squares. In: Kotz, S., Balakrishnan, N., Read, B.C, & Vidakovic, B. (eds) *Encyclopaedia of Statistical Science* 6. Eds, 581-591. New York, NY: Wiley.
- Wood, M. S. (2017). Misgivings about dismantling the opportunity construct. *Journal of Business Venturing Insights*, 7, 21-25.
- Wood, M. S., Williams, D. W., & Drover, W. (2017). Past as prologue: Entrepreneurial inaction decisions and subsequent action judgments. *Journal of Business Venturing*, 32(1), 107-127.
- Zajonc, R. B. (1968). Attitudinal effects of mere exposure. *Journal of Personality and Social Psychology*, 9(2), 1-27.
- Zajonc, R. B. (2001). Mere exposure: A gateway to the subliminal. *Current directions in Psychological Science*, 10(6), 224-228.

- Zhang, Y., Duysters, G., & Cloudt, M. (2014). The role of entrepreneurship education as a predictor of university students' entrepreneurial intention. *International Entrepreneurship and Management Journal*, 10(3), 623-641.
- Ziegelmann, J. P., Luszczynska, A., Lippke, S., & Schwarzer, R. (2007). Are goal intentions or implementation intentions better predictors of health behavior? A longitudinal study in orthopedic rehabilitation. *Rehabilitation Psychology*, 52(1), 97.