

**Determinants of entrepreneurial intentions:  
The interrelated role of background,  
situational and psychological factors**

**Eftychia Palamida**

**Doctor of Philosophy**

**Newcastle University Business School**

**May 2016**

## **Abstract**

The role of entrepreneurial intentions in explaining entrepreneurial behaviours is well-established on a theoretical basis but there is still a need to examine the diverse and interrelated factors that jointly lead to the formation of entrepreneurial intentions and behaviours. Based on a systematic literature review of entrepreneurial intentions three main research questions emerged related to the applicability of psychological models that determine entrepreneurial intentions and, consequently, behaviours. Following these, this thesis undertakes four empirical studies to address the identified questions. Each study is based on a conceptual model that is examined by implementing appropriate quantitative research methods and reflects on the investment context.

The first empirical study examines whether the availability of capital and entrepreneurial motivation impact on entrepreneurial intentions at challenging times such as those encountered during the economic recession in Greece. The study provides insights regarding how the environmental factors interact with background and psychological factors in determining entrepreneurial intentions. In doing so, it extends and tests the ecological validity of Bird's Entrepreneurial Intentionality Model in the investment context.

The second empirical study addresses the motivations and the conditions under which the Theory of Planned Behaviour (TPB) psychological constructs relate and interact. It goes beyond the applicability and ecological validity of the TPB by showing the presence of mediating and moderation effects between and among the psychological constructs in the Greek investment context.

The third empirical study examines whether background factors indirectly influence entrepreneurial intentions via psychological constructs and whether the relationships differentiate between cultural backgrounds. The study extends Bird's Entrepreneurial Intentionality Model using the TPB, and the role of culture, by showing that the availability of capital determines intentions differently when it comes to young individuals from a collectivistic culture (Greece) and individualistic culture (England).

The objective of the above empirical studies was to advance the understanding of entrepreneurial intentions by approaching intentions as a dependent construct. Under each study the contributions to theory and practice are discussed in detail. Overall, this research concludes that entrepreneurial intentions are formed based on i) background factors concerning individuals' availability of capital and cultural orientation ii) situational/environmental factors related to the recent economic crisis and iii) psychological factors such as motives, personal attitudes, subjective norms and perceived behavioural control. The extension of existing psychological models and theories with the incorporation of additional theoretical lenses provides valuable practical implications and recommendations for policy makers in order to boost venture creation and growth activities on a national or international basis.

## Declaration

I declare that this thesis is my own work and certify that no part of the material offered has been previously submitted by me for a degree or other qualification in this or any other University.

The thesis consists of four papers, part of which has been presented at international conferences, while one of them has been accepted for publication in the *Journal of Small Business Management*. Please see the journal and conference papers below.

1. Palamida, E., Papagiannidis, S., Xanthopoulou, D. and Stamati, T. (in press) 'Capital, motives and their link to investment intentions: The moderating role of the financial crisis in Greece', *Journal of Small Business Management*.

2. Palamida, E., Xanthopoulou, D., Papagiannidis, S. and Stamati, T. (2013) 'Analysing individuals' investment intentions: An application of the extended Theory of Planned Behaviour model in the Greek context', *European Academy of Management (EURAM)*. Istanbul, Turkey.

3. Palamida, E., Papagiannidis, S., Xanthopoulou, D. and Stamati, T. (2012) 'Predicting entrepreneurial team formation intentionality: Applying the Theory of Planned Behaviour', *EuroMed Academy of Business (EUROMED)*. Glion-Montreux, Switzerland.

4. Palamida, E., Papagiannidis, S. and Xanthopoulou, D. (2012) 'Studying entrepreneurial team formation from an individual perspective: The role of human, social, financial capital and motives', *Institute of Small Business and Entrepreneurship (ISBE)*. Dublin, Ireland.

5. Palamida, E., Papagiannidis, S., Xanthopoulou, D. and Stamati, T. (2012) 'Revisiting the skills brokerage business model: An application to the Greek Financial Crisis', *British Academy of Management (BAM)*. Cardiff, UK.

6. Palamida, E., Xanthopoulou, D. and Papagiannidis, S. (2011) 'Brokering skills for well-being', *British Academy of Management (BAM)*. Birmingham, UK.

I was responsible for the work that has been included in my thesis (literature reviews, research design, data collection, analysis and writing-up etc.) and the related conference and journal papers. This is reflected in me being the first author in all the above submissions. My co-authors Savvas Papagiannidis and Despoina Xanthopoulou have advised me as part of the usual feedback provided during the supervision process. Their involvement with regards to conference and journal submissions revolved around providing feedback in order to strengthen the work and increase the chances of acceptance. I then personally addressed all the comments made. Teta Stamati only contributed to the data collection process by providing access to email lists in Greece.

## **Dedication**

*To my Mother and my Sister, for being always by my side, for loving me and for supporting me all these years.*

*I love you!*

## **Acknowledgements**

The road to knowledge requires strength, confidence, passion and the ability to overcome obstacles. Nothing would have been the same without the people who were next to me during this difficult but constructive journey. First of all, I would like to thank my supervisor, Prof. Savvas Papagiannidis, and Dr. Despoina Xanthopoulou for their efficient and effective transferring of their knowledge and their moral support. Their help was invaluable in many respects. Special thanks to my family for giving me the opportunity to make my dream come true and being next to me not only in good but also in bad times. I would also like to thank my fiancé Vasileios Popotas for his support. Last but not least, I would like to thank all those who participated in this research and devoted part of their valuable time to this research.

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## Chapter 1. Introduction

Metaphorically speaking, “entrepreneurship” can be seen as a concept of *building* by referring to the need to take time and care over business creation, while the “entrepreneurial process” can be seen as a *journey*, where entrepreneurs enter the high competition arena like being in a *war*, fight in order to achieve their goals and establish *passion and love* relationships with their venture by treating their venture like *growing a child* (Dodd, 2002). Entrepreneurship theory draws on diverse disciplinary backgrounds, such as economics, education, finance, marketing, mass communications, political science, psychology, sociology and strategy (Bull and Willard, 1993). Taking into consideration that entrepreneurship can be defined either from a micro-level perspective (individual perspective) or from a macro-level perspective (firm perspective) (Vecchio, 2003), the analysis of entrepreneurship from an individual perspective shifts the main focus to the “entrepreneur”.

By adopting Shane and Venkataraman’s (2000) point of view, entrepreneurs are individuals who recognise and exploit opportunities that lead to the creation of future goods and services either outside or inside an existing organisation. The existing literature refers to different types of entrepreneurs. “Nascent” entrepreneurs are the individuals that have been engaged in some sort of entrepreneurial activities such as the business plan formation or resource acquisition and intend to create or grow an existing venture (Delmar and Davidsson, 2000). “Novice or habitual” entrepreneurs have already established or grown their venture and are distinguished according to their non-previous or previous entrepreneurial activity (Westhead and Wright, 1998). “Social” entrepreneurs are individuals driven by total wealth in terms of tangible resources such as products, client funds and intangible resources, such as happiness and general wellbeing (Zahra *et al.*, 2009).

This research turns the focus onto individuals that had not been engaged in any kind of entrepreneurial activity at the time that the research was conducted. In order to better understand the link between individuals and entrepreneurial engagement, this thesis is based on four studies. In particular, an extensive literature review study and three empirical studies are included and discussed in the following sections.



## 1.1 Studying entrepreneurial intentions

Entrepreneurial research from an individual perspective is related to what entrepreneurs do in terms of the activities involved in the venture creation and growth process, why individuals decide to engage in entrepreneurial activities and what factors influence such decisions. Therefore, understanding the entrepreneur requires behavioural approaches (Carland *et al.*, 1988). The psychological structures that best explore such questions and explain entrepreneurial behaviours relate to entrepreneurial cognition. Entrepreneurial cognition is the knowledge structure that individuals use to make decisions and judgments in order to identify, evaluate and exploit an entrepreneurial idea (Mitchell *et al.*, 2002). Based on their cognition individuals decide to engage in entrepreneurial behaviours when they have previously formed strong entrepreneurial intentions (Fishbein and Ajzen, 1975; Shapero and Sokol, 1982; Sheppard *et al.*, 1988; Ajzen, 1991; Armitage and Conner, 2001; Krueger, 2007).

Previous meta-analyses in the context of social psychology that were based on findings from correlational (e.g. Sheeran, 2002) and experimental studies (Webb and Sheeran, 2006) suggested that intentions have strong to medium associations with actual behaviour. In the entrepreneurial domain scholars have verified the positive relationship between intentions to engage in entrepreneurial activities and actual entrepreneurial engagement (Kolvereid and Isaksen, 2006; Chuluunbaatar *et al.*, 2011; Lanero *et al.*, 2011; Guzmán-Alfonso and Guzmán-Cuevas, 2012; Kautonen *et al.*, 2013). Still, criticism regarding the intention-behaviour relationship is based on the argument that intentions do not always lead to action and that third variables (e.g., perceived behavioural control or the ease or difficulty individuals might have when taking control over a given behaviour under specific circumstances; Ajzen, 1991) moderate the intention-behaviour relationship (Conner *et al.*, 2000). This critique undermines the role of intentions for entrepreneurial action, particularly in times of crisis, where individuals have limited control over the situation. However, in most studies control was found to boost a nevertheless existing positive relationship between intention and behaviour (Armitage and Conner, 2001). In other words, the positive relationship between intention and behaviour is more likely to exist (even if it is not strong) irrespective of the levels of control, which underlines the importance of testing intentions. This evidence suggests that the potential moderating effects of behavioural control do not

really downgrade the relationship between intentions and behaviour, because it seems unlikely that people would intend to perform behaviours that in reality they cannot perform (Sheeran, 2002). This argument is supported by the results of the meta-analysis of Webb and Sheeran (2006). The authors anticipated that interventions that generated significant changes in both intention and (perceived behavioural) control would have larger effects on behaviour as compared to intention-only interventions. However, results of their meta-analysis showed that interventions that were successful only in changing intention had stronger effects on behaviour. For these reasons, it is important to study intention formation.

Cognitive research on entrepreneurial intentions and its antecedents has matured, especially during the past twenty years. Scholars have identified factors affecting individuals' formation of entrepreneurial intentions and applied a wide range of psychological models. Diverse findings regarding the role of psychological aspects on entrepreneurial intentions (Kolvereid, 1996b; Tkachev and Kolvereid, 1999; Lüthje and Franke, 2003; Liñán and Santos, 2007; Fernández *et al.*, 2009; Engle *et al.*, 2010; Franco *et al.*, 2010; Chuluunbaatar *et al.*, 2011; Altinay *et al.*, 2012; Siu and Lo, 2013; Volery *et al.*, 2013) indicate that a review is necessary in order to map and compare previous findings and, most importantly, re-direct future research. Therefore, the initial study (Chapter 2) of this thesis is based on a systematic literature review that identifies common patterns and research gaps in previous entrepreneurial intentionality research. Propositions regarding future research that may combine or extend the existing psychological theories/models with non-psychological factors of entrepreneurial intentions as indicated in the literature review feed into the rest of the studies.

## **1.2 From entrepreneurial to investment intentions**

One of the core findings of the literature review concerns the way that entrepreneurial intentions have been operationalised and examined in accordance with what scholars define as entrepreneurial activities and behaviours. In this regard, scholars (e.g. (Krueger *et al.*, 2000; Souitaris *et al.*, 2007; Edelman *et al.*, 2010; Liñán *et al.*, 2011c; Davis and Shaver, 2012; Ferreira *et al.*, 2012; Bullough *et al.*, 2013; Douglas and Fitzsimmons, 2013; Kautonen *et al.*, 2013; Laguna, 2013; Walter *et al.*, 2013; Fayolle *et al.*, 2014; Piperopoulos and Dimov, 2014; Schlaegel and Koenig, 2014; Zapkau *et al.*,

2015) have extensively focused on analysing individuals' intentions to create new ventures solely by initially identifying a new entrepreneurial opportunity and afterwards searching for the required resources in order to put the idea into action.

However, establishing a venture requires a combination of diverse resources that may not be possessed by a single person. When available, financial support from investors can play a catalytic role in putting an entrepreneurial idea into action. Previous research has extensively focused on the role of formal investors as venture capitalists in the entrepreneurial process (Davila *et al.*, 2003; Zacharakis and Shepherd, 2005; de Bettignies and Brander, 2007; Zacharakis *et al.*, 2007). Still, in the current financial climate, attracting venture capital is a success in its own right. In such circumstances the scarcity of venture capital may be potentially substituted by informal investing (Burke *et al.*, 2010). Indeed, scholars have focused on informal investors (e.g. business angels, friends and family) as alternative sources of financial support (see Landström, 1998; Bygrave *et al.*, 2003; Wong *et al.*, 2009; Burke *et al.*, 2010). The challenge is, though, that under financial constraints, informal financial capital is also scarce. This may leave little room for considering investing, as friends and family simply cannot afford to do so.

When faced with such bleak prospects, one could consider alternative ways of resourcing new ventures. In today's knowledge economy, investing diverse forms of capital could provide a way of exploiting opportunities without being hindered by a lack of financial liquidity. Investors may offer human capital in the form of skills and knowledge gained either through education or work experience (Rauch *et al.*, 2005; Gimmon and Levie, 2010) that can be directly applied to the venture. They may also share their personal networks and their relationships, giving entrepreneurs and their ventures access to other tangible or intangible resources (Portes, 1998; Uihøi, 2005). This is not to say that financial capital can be entirely replaced, but that under conditions of financial scarcity, the role of human and social capital investment may be of relatively higher importance.

In situations of different kinds of resource scarcity individuals may act as bricoleurs and come up with whatever resources are to hand (Baker and Nelson, 2005) in order to create or grow a venture. The venture can be based on a team of individuals who jointly and actively participate in the creation, management and development of a venture, by

offering, sharing and investing their capabilities (human, social, financial capital), contributing to interdependent tasks and responsibilities, sharing risks and having a financial interest (equity or profit sharing) (Kamm *et al.*, 1990; Cohen and Bailey, 1997; Ucbasaran *et al.*, 2003; Cooney, 2005; Forbes *et al.*, 2006; Tihula *et al.*, 2009; Iacobucci and Rosa, 2010). Based on this theoretical basis, venture creation and growth in the traditional economy, and especially in the new information driven economy, is more a matter of various combinations of capital, which can be effectively implemented in the entrepreneurial process. Prior to the team formation the leading entrepreneur captures the idea, creates the vision and then assembles others who will share it (Ensley *et al.*, 2000), in order to fill in the venture's resource gaps (Timmons, 1979) by investing in it. In the context of this thesis, "*Investors*" are individuals who may participate in a potential venture team in order to receive a share of the venture's revenues by investing their human, social and/or financial capital in a business idea that they truly believe in (Papagiannidis and Li, 2005).

This follows Sarasvathy's (2001) theorisation regarding causation and effectuation processes in the entrepreneurial domain. The former "*take a particular effect as given and focus on selecting between means to create that effect, while the latter take a set of means as given and focus on selecting between possible effects that can be created with that set of means*" (Sarasvathy, 2001, p. 245). In this sense, "means" can be interpreted as the resources, in the form of financial-human-social capital, that are needed in order to exploit an entrepreneurial opportunity and the "effect" can be considered as an entrepreneurial opportunity that has been exploited. Based on Sarasvathy's (2001) differentiation it can be argued that entrepreneurs follow the causation process (Williams *et al.*, 2013) by identifying an entrepreneurial opportunity and try to find the appropriate resources in order to exploit their new business idea.

It is also argued that individuals with available forms of capital potentially act as entrepreneurs by follow an effectuation process (Sarasvathy, 2001) and concentrate pragmatically on the available resources that they have at hand by investing these resources. Namely, they exploit opportunities by investing their resources in an already identified entrepreneurial opportunity. Achieving a greater likelihood of setting up new ventures and growing successful ventures requires a superior ability to recognise and exploit opportunities by investing-utilizing financial, human and social capital and by

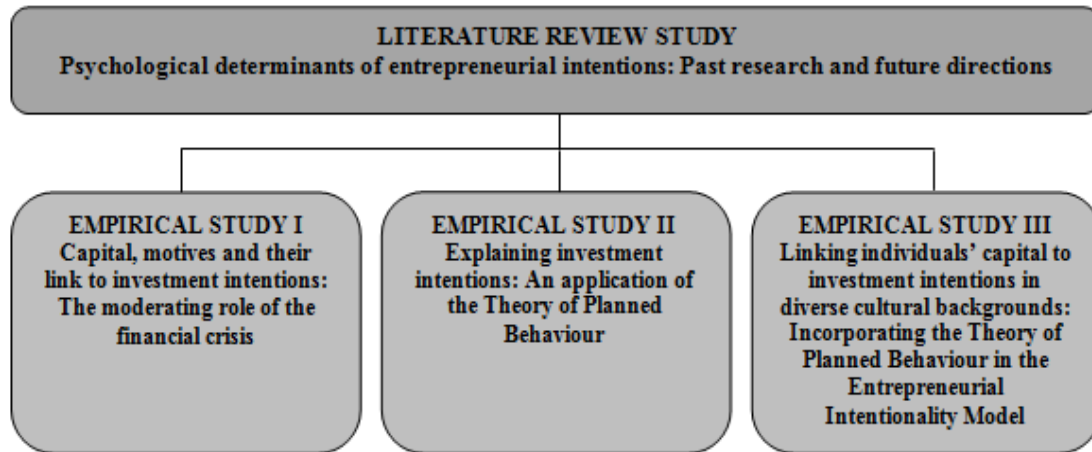
developing human and social skills (Markman and Baron, 2003). Considering that entrepreneurship is defined as the identification and exploitation of opportunities to create or grow a venture (Shane and Venkataraman, 2000), entrepreneurial behaviours occur when individuals decide to act upon an opportunity (Shane, 2003). Despite the fact that individuals who identify and exploit opportunities to invest their diverse forms of capital in order to create new business or participate in existing ventures that may result in innovative products or services (Cromie, 2000) may not participate in the idea generation or the venture may not be a new opportunity, still the opportunity for the investment along with the potential to create new value is new. Based on the above argumentation, investors as conceptualised in this thesis are assumed to be entrepreneurial in nature and consequently engaging in investment activities in order to create or grow a venture can be conceptualised as an entrepreneurial behaviour.

Entrepreneurship is approached as a process where individuals' intentions are considered to be the key predictor of an intentional behaviour (Fishbein and Ajzen, 1975; Shapero and Sokol, 1982; Sheppard *et al.*, 1988; Ajzen, 1991; Armitage and Conner, 2001; Krueger, 2007). In this regard, individuals possessing certain levels of available capital that can be directly applied to the venture may form entrepreneurial intentions even if they have not identified an entrepreneurial idea. Shook *et al.* (2003) argue that the inconsistency, and in some cases the absence, of a definition of entrepreneurial intent across studies leads to a debate about whether this refers to starting a new venture or owning one's own business. Thompson (2009, p. 676) proposed that entrepreneurial intent is better defined as a "*self-acknowledged conviction by a person who intends to set up a new business venture and consciously plan to do so at some point in the future*". However, given that entrepreneurship can refer to both the establishment of new ventures and adding value to an existing one (Shane and Venkataraman, 2000), such a definition of entrepreneurial intention does not encompass all types of entrepreneurial actions. Therefore, in this thesis entrepreneurial intentions such as "*investment intentions*" represent individuals' desires, preferences and plans to act entrepreneurially, i.e. act upon an opportunity (Shane, 2003), by investing diverse forms of instantly available capital (human, social, financial) in creating new ventures or in creating new value in existing ventures that they truly believe in (Bird and Jelinek, 1988; van Gelderen *et al.*, 2008).

Investors as conceptualised in this thesis need further investigation for two main reasons. Firstly, investors that contribute to the entrepreneurial process and act as entrepreneurs are crucial, especially in times of a global financial crisis, where policy makers need to boost venture creation or growth and individuals need to motivate themselves in this direction. Secondly, research on investors will enable scholars to make comparisons with traditional entrepreneurs that follow causation processes in order to engage in entrepreneurial activities. This comparison may shed light on whether the two groups acquire distinctive behavioural beliefs and cognitive mechanisms in general, which would indicate the need for policy makers to adopt common or diverse approaches when attempting to find mechanisms that will make entrepreneurship flourish.

Therefore, the empirical studies (Chapter 4, 5 and 6) of this thesis are focused on individuals' intention to engage in entrepreneurial activities such as investment activities. Considering that individuals form entrepreneurial intentions based on a combination of backgrounds, situational and psychological factors (Bird, 1988; Krueger, 2000; Ajzen and Fishbein, 2005), the main purpose of this thesis is to investigate how and when these factors interrelate and interact in the investment context. In order to do so, the empirical studies in this thesis are treated in a self-contained manner with their own set of research questions, conceptual models and methodological approaches. The underlying basis for these studies is the grounding on psychological models and theories, such as motivation theory, the Entrepreneurial Intentionality model and the Theory of Planned Behaviour, in determining entrepreneurial intentions. A visual representation of this thesis with the main themes of each study is depicted in Figure 1. A brief elaboration on the three empirical studies and their interconnections follows.

**Figure 1.1 Thesis structure and studies**



Previous research has recognised diverse situational factors that may affect individuals' intentions towards entrepreneurial activities. Still, the recent financial crisis demands a more detailed examination of the impact that economic recessions may have on individuals' decisions to engage in entrepreneurial activities, especially in countries that have deeply felt the implications of the crisis, such as Greece. Empirical study I (Chapter 4) concerns potential investors' availability of capital (human, social, financial) and motives (financial success, independence, innovation, recognition, self-realisation) and their link to investment intentions by examining the moderating role of the financial crisis based on Bird's (1988) conceptualisation that background and situation factors interact in determining entrepreneurial intentions.

Considering that entrepreneurial intentions are not solely determined by background and situational factors but are also influenced by psychological constructs such as personal attitudes, subjective norms and perceived behavioural control, it is crucial to reconsider their role in the investment context if one wants to understand the process that depicts venture creation and growth engagement holistically. Despite the fact that extant previous research has focused on applying the Theory of Planned Behaviour (Ajzen, 1991) in the entrepreneurial context, diverse results regarding the influence of attitude, subjective norms and perceived behavioural control still exist (Kolvereid, 1996b; Autio *et al.*, 2001; Souitaris *et al.*, 2007; Wu and Wu, 2008; Boissin *et al.*, 2009; Engle *et al.*, 2010; Kautonen *et al.*, 2010; Liñán *et al.*, 2011c; Ferreira *et al.*, 2012; Moriano *et al.*, 2012; Siu and Lo, 2013). In this regard, possible mediating and moderating effects between and among the antecedents of intentions may best explain

why and when core relationships, as proposed in the Theory of Planned Behaviour (Ajzen, 1991), may hold in the investment context. Therefore, empirical study II (Chapter 5) is not limited to testing the applicability and ecological validity of the Theory of Planned Behaviour (Ajzen, 1991) in the investment context but goes a step further by examining mediating and two-way/three-way moderating effects among Greek individuals' personal attitude, subjective norms and perceived behavioural control that may suggest a simultaneous or substitution effect in the investment context.

Based on the fact that background and psychological factors may jointly determine entrepreneurial intentions, one could argue that the proposed direct relationships between capital and investment intentions in empirical study I and the mediating effects among the Theory of Planned Behaviour constructs in empirical study II could more precisely depict the process that individuals follow in forming entrepreneurial intentions. The relationship between background factors such as individuals' available human-social-financial capital and entrepreneurial intentions (Evans and Jovanovic, 1989; Robinson and Sexton, 1994; Crant, 1996; de Noble *et al.*, 1999; Man *et al.*, 2002; Davidsson and Honig, 2003; Haynes, 2003; Arenius and Minniti, 2005; de Clercq and Arenius, 2006; Kim *et al.*, 2006; Liñán, 2008; Liñán and Chen, 2009; Fini *et al.*, 2010; Gimmon and Levie, 2010; Mitchelmore and Rowley, 2010; Cetindamar *et al.*, 2011) needs further development in order to examine the proposed relationships based on solid theoretical lenses. The proposed relationships may differ according to the mediating role of the Theory of Planned Behaviour antecedents (Ajzen, 1991) and individuals' collectivistic and individualistic national orientation (Markus and Kitayama, 1991; Triandis, 1995; Ajzen and Fishbein, 2005), which merits a detailed investigation. Empirical study III (Chapter 6) combines the Theory of Planned Behaviour (Ajzen, 1991) and Bird's (1988) Entrepreneurial Intentionality Model in order to explore the effects of capital on young individuals' investment intentions in diverse cultural backgrounds (Greek vs English nationality individuals).

### **1.3 Research aims, objectives and questions**

The initial aim of this thesis is to depict the psychological determinants of entrepreneurial intentions and highlight the main gaps that future research needs to fill in. In an attempt to better understand entrepreneurial intentions the focus is turned on investment intentions, conceptualised as individuals' intentions to participate in the



venture creation and growth process by investing human-social-financial capital. In order to do so, this thesis differentiates between entrepreneurs, who conceive the idea and lead a venture, and investors, who act as entrepreneurs and may support a venture that they truly believe in by investing the necessary resources. Focusing on the latter and following propositions derived from the literature review study the aim of this thesis is extended by examining the interrelated role of background, situational and psychological factors. In this regard, the purpose of this thesis is fourfold.

*Firstly*, this thesis will map the underlying patterns and evaluate findings related to psychological models/theories that have been applied in examining entrepreneurial intentionality. *Secondly*, this thesis will extend and test the ecological validity of Bird's Entrepreneurial Intentionality Model (Bird, 1988) by incorporating the moderating role of environmental/situational factors and the inclusion of background aspects in the investment context. *Thirdly*, this thesis will go beyond the applicability and ecological validity of the Theory of Planned Behaviour (TPB; Ajzen, 1991) by examining mediating and moderating effects between and among the TPB constructs in the investment context. *Finally*, this thesis will extend and test Bird's Entrepreneurial Intentionality Model (Bird, 1988) with the inclusion of the TPB (Ajzen, 1991; Ajzen and Fishbein, 2005) and the role of individuals' collectivistic and individualistic cultural dimensions in the investment context.

This thesis will meet specific research objectives and will attempt to provide answers to diverse research questions. It should be noted that the main recommendations of the literature review study are summarised and serve as the overall objectives of the three empirical studies. The research objectives and research questions of the literature review study and the three empirical studies are presented separately in Table 1.

**Table 1.1 Research Objectives and Questions**

Literature Review Study	Research Objectives	Research Questions
Initial study (Chapter 2)	<ol style="list-style-type: none"> <li>1. Determine the definitional approaches regarding entrepreneurial intentions.</li> <li>2. Explore the psychological factors that determine entrepreneurial intentions based on the psychological models/theories that have been applied in the entrepreneurial intentionality domain.</li> <li>3. Identify the methodological approaches when examining the applicability of psychological models/theories in the entrepreneurial intentionality domain.</li> <li>4. Following the above questions, specify the main future research avenues in order to better understand entrepreneurial intentions.</li> </ol>	<ol style="list-style-type: none"> <li>1. How does the conceptualisation of entrepreneurial intent differentiate between venture creation and growth?</li> <li>2. How are entrepreneurial intentions formed? What are the main psychological determinants?</li> <li>3. What are the key findings regarding the application of psychological models and theories? What other cognitive psychology theories could potentially expand or complement existing research on entrepreneurial intentions?</li> <li>4. What are the similarities/differences in terms of the sample focus, regional variations and contextual considerations in entrepreneurial intentions studies? Is there room for further development?</li> </ol>

		5. What are the opportunities and challenges to broaden the understanding of entrepreneurial intentions?
<b>Empirical Studies</b>	<b>Research Objectives</b>	<b>Research Questions</b>
Empirical Study I (Chapter 4)	<p>1. Determine whether the financial crisis interacts with human, social and financial capital in the formation of entrepreneurial intentions such as investment intentions.</p> <p>2. Determine whether the financial crisis interacts with diverse motives in the formation of entrepreneurial intentions such as investment intentions.</p>	<p>1. Does human, social and financial capital relate to investment intentions?</p> <p>2. Is the link between capital and investment intentions stronger for those individuals who report that the financial crisis has affected their income/work in a negative way?</p> <p>3. Do motivational constructs such as financial success, independence, innovation, recognition and self-realisation relate to investment intentions?</p> <p>4. Is the relationship between motives and investment intentions stronger for those individuals who report that the financial crisis has affected their income/work in a negative way?</p>

Empirical Studies	Research Objectives	Research Questions
Empirical Study II (Chapter 5)	<p>1. Determine the reasons why the psychological constructs, namely personal attitudes, subjective norms and perceived behavioural control, relate to investment intentions.</p> <p>2. Explore the conditions under which the aforementioned psychological constructs relate and interact in the investment context.</p>	<p>1. Do personal attitudes, subjective norms and perceived behavioural control relate to investment intentions?</p> <p>2. Do attitudes and control simultaneously mediate the relationship between norms and investment intention?</p> <p>3. Is the relationship between attitudes and investment intentions stronger when there is a favourable norm?</p> <p>4. Is the link between norms and investment intentions stronger when there is a strong sense of control?</p> <p>5. Is the relationship between attitudes and investment intentions stronger when there is a strong sense of control?</p> <p>6. Is the link between attitude and investment intention stronger when a favourable norm and a strong sense of control are simultaneously present?</p>

<b>Empirical Studies</b>	<b>Research Objectives</b>	<b>Research Questions</b>
<p>Empirical Study III (Chapter 6)</p>	<p>1. Explore whether background factors concerning the availability of human, social, financial capital indirectly influence entrepreneurial intentions such as investment intentions via personal attitudes, subjective norms and perceived behavioural control.</p> <p>2. Determine how culture influences the aforementioned processes between individuals with a collectivistic and individualistic cultural background.</p>	<p>1. Do personal attitudes, subjective norms and perceived behavioural control mediate the relationship between human, social, financial capital and investment intentions?</p> <p>2. Do norms with attitudes in sequence and norms with control in sequence mediate the link between human, social, financial capital and investment intentions?</p> <p>3. Are the attitudes - intention, control - intention, human capital - intention relationships in the investment context stronger among individuals with an individualistic than collectivist cultural background?</p> <p>4. Are the norms - intention, social capital - intention, financial capital - intention links in the investment context stronger among individuals with a collectivist than individualistic cultural background?</p>

#### **1.4 Chapter summary**

This chapter has highlighted investment intentions and their conceptualisation as entrepreneurial intentions while precisely presenting the aim, research objectives and research questions of this thesis. The above provided an overview of the structure of this thesis by making clear that this research is based on four studies. Particularly, this thesis comprises of an extensive literature review on entrepreneurial intentions that provides key recommendations for future research in the field and three empirical studies that are motivated from distinctive parts of the literature review suggestions. Therefore, this thesis will initially present a chapter that reflects on the literature review study. The following chapter summarises the psychological model and theories that have been applied in the entrepreneurial domain, discusses the findings by critically reviewing the applicability of the identified models/theories and provides key suggestions for future research in the field. Most importantly, some of the recommendations will be directly linked to the empirical studies of this thesis.

## **Chapter 2. Literature review study - Psychological determinants of entrepreneurial intentions: past research and future directions**

### **2.1 Introduction**

Entrepreneurship can be defined either from a macro-level perspective (firm perspective) or from a micro-level perspective (individual perspective) (Vecchio, 2003). Individuals play a crucial role in the entrepreneurial process, because they are fundamental actors related to opportunity identification and exploitation leading to venture creation and growth (Shane and Venkataraman, 2000). Considering that venturing is an intentional act that involves repeated attempts to exercise control over the process in order to achieve the desired outcome (Shaver *et al.*, 2001), intentionality in other words, the state of mind directing a person's attention toward a specific goal or a path in order to achieve something, can be considered as an explanation of either creating a new venture or creating new values in an existing venture (Bird, 1988).

Among diverse cognitive factors and processes that determine entrepreneurial behaviour, the entrepreneurial cognition research stream has focused on entrepreneurial intentions. Scholars have identified factors affecting individuals' formation of entrepreneurial intentions and applied a wide range of psychological models. There is a rapidly growing body of literature focusing on entrepreneurial intentions, either by exploring the main factors shaping intentions or applying validated models from psychology (e.g. Krueger, 1993b; Boyd and Vozikis, 1994; Kolvereid, 1996a; Kolvereid, 1996b; Jenkins and Johnson, 1997; Chen *et al.*, 1998a; Tkachev and Kolvereid, 1999; Krueger, 2000; Raijman, 2001; Douglas and Shepherd, 2002; Lüthje and Franke, 2003; Soo Hoon Lee and Wong, 2004; Segal *et al.*, 2005; Fayolle *et al.*, 2006; Dimov, 2007; van Gelderen *et al.*, 2008; Liñán and Chen, 2009; Shook and Bratianu, 2010; Liñán *et al.*, 2011c; Laviolette *et al.*, 2012; de Jong, 2013).

Understanding the processes that lead to venture creation and growth requires a more detailed explanation and better understanding of individuals' intent to engage in entrepreneurial activities (Bird, 1988; Bird and Jelinek, 1988; Krueger, 2003) for three main reasons. Firstly, entrepreneurial intentions represent the cognitive state that influences individuals' entrepreneurial behaviour (Thompson, 2009). Secondly, the “*intentionality*” of being an entrepreneur (Katz and Gartner, 1988) constitutes the initial

step leading to entrepreneurial behaviour (Krueger, 2007; Kessler and Frank, 2009). Thirdly, entrepreneurial intentions provide greater predictive validity regarding entrepreneurial behaviour in contrast to specific characteristics that can be potentially identified in entrepreneurs (Krueger *et al.*, 2000).

As entrepreneurial intentions research and its antecedents has been coming to maturity over the past twenty years, a systematic literature review of entrepreneurial intentions is necessary in order to identify underlying patterns and evaluate findings related to entrepreneurial intentionality. Most importantly, mapping and critically reviewing previous research on entrepreneurial intentions will provide new directions for entrepreneurial cognition researchers. Scholars could re-direct their research focus and fill in gaps in the entrepreneurial intentions research, offering valuable insights that have practical applications too. Previous reviews have incorporated specific aspects of entrepreneurial cognition such as entrepreneurial intentions in their studies (Krueger, 2003; Shook *et al.*, 2003) but a more detailed and holistic perspective on the determinants of entrepreneurial intentions is needed. The aim of this study is to review the existing literature on entrepreneurial intentions systematically in order to map and critically assess the findings, determine the key research themes and development patterns and finally propose an agenda for future research.

This systematic literature review was based on three stages. The first two stages relate to the identification of the relevant literature, while the last stage entails the coding and re-coding procedure of the identified papers. In the first stage, a criterion sampling approach to identify the relevant literature on entrepreneurial intentions has been adopted. Eight online databases, namely Ebsco, Scopus, Science Direct, Wiley, Sage, Taylor & Francis, Springer Link and Emerald, were used to identify articles based on a combination of specific search terms. This study used diverse keywords related to entrepreneurship. The search was based on derivatives of the root of the main search terms in order to capture the authors' interpretations. More specifically, the following combinations of keywords have been used: [entrepreneur\* (capturing entrepreneur, entrepreneurs, entrepreneurship and entrepreneurial) OR self-employment or venture creation or venture growth or opportunity] AND intent\* (capturing intent, intention, intentions and intentionality). Papers that include the aforementioned combination of keywords in Title, Abstract or Keywords constituted the initial target. Inclusion and



exclusion criteria were further set up in order to narrow down the search and guarantee a validated sample of articles. Papers with a) Document type: Article, Review or Article in press b) Language: English and c) Content/source type: Journal, have been included in the analysis. Editorials, Conference papers, Books, Book chapters/reviews and Reports were excluded from the search. Limitations regarding the starting point of the review period were implied. This study attempts to capture and conceptualise research on entrepreneurial intentions from 1993 till 2013 (20 years). In the second stage, abstracts were reviewed and cross validated. Only research papers that clearly related to entrepreneurial intentions were included in the final review. In the last stage, papers have been classified according to subject categories. The main categories included definitional aspects, key findings and the main research focus. Coding results were cross-checked and articles were revisited for re-coding until convergence was reached.

The literature search resulted in three hundred and sixty one (361) articles in total. After careful consideration the following were excluded from the research pool: thirty two (32) papers because of limited access to their full version, forty seven (47) articles that were irrelevant to entrepreneurial intentions and thirty nine (39) papers that concerned entrepreneurial intentions but were conceptual. Of the remaining two hundred and forty three (243) research articles, forty (40) of them were identified as weak in terms of conceptual and methodological approaches and were therefore excluded from the review. All two hundred and three (203) papers concentrated on the diverse factors that determine entrepreneurial intentions. Considering that the purpose of this review was to identify the cognitive factors that determine entrepreneurial intentions, research (46 articles) that concentrated only on the role of personal, situational or environmental constructs in determining entrepreneurial intentions has been excluded. The most fundamental distinction was based on the psychological theories/models that have been most widely implemented in the entrepreneurial domain. One hundred and thirty (130) articles that have been included in this review were initially distinguished according to the way that they conceptualise entrepreneurial intentionality and were accordingly grouped into the venture creation/self-efficacy context and the growth-oriented context. In each context five broad psychological categories concerning Personality theory, Motivation theory, Self-efficacy theory, Entrepreneurial Event model and the Theory of Planned Behaviour have been identified.

For each theory/model core findings were depicted and sample orientation was provided in terms of cultural dimensions (country of residence and national origins).

## **2.2 Definitional aspects of entrepreneurial intent**

Shane and Venkataraman (2000, p. 218) define the entrepreneurship field as the “scholarly examination of how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited”. In other words entrepreneurial behaviours encompass entrepreneurial activities related to opportunity identification and exploitation (Shane and Venkataraman, 2000). Entrepreneurial behaviours occur when individuals decide to act upon an opportunity (Shane, 2003) but not all opportunities will result in entrepreneurial actions because behind entrepreneurial actions are entrepreneurial intentions (Krueger, 2007). Therefore “intentionality” (Katz & Gartner, 1988, p. 431) is considered an important variable in determining entrepreneurship. The entrepreneurial intent is interpreted differently by covering a range of entrepreneurship-related but diverse concepts. Scholars have defined entrepreneurial intent based on entrepreneurial behaviours that entail diverse types of entrepreneurial actions. The majority of research papers have operationalised entrepreneurial intent based on Thompson’s (2009, p. 676) proposed definition that describes entrepreneurial intent as a “*self-acknowledged conviction by a person who intends to set up a new business venture and consciously plans to do so at some point in the future*”. In this regard, entrepreneurial intent is strongly associated with individual's intention to create a new venture from scratch (e.g. Krueger, 1993b; Chen *et al.*, 1998a; Peterman and Kennedy, 2003; Frank *et al.*, 2007; Liñán and Chen, 2009; Kautonen *et al.*, 2010; de Clercq *et al.*, 2012; Tumasjan *et al.*, 2013). Thirteen articles in this review approached entrepreneurial intent as the intention to own a business or to be self-employed (e.g. Kolvereid, 1996a; Souitaris *et al.*, 2007; Iakovleva and Kolvereid, 2009; Walter *et al.*, 2013). Starting a new venture and owning one’s own business can be relative or distinct actions. Owning a business or becoming self-employed can be interpreted as creating a new venture or undertaking an existing one. In the case that individuals undertake an established venture the entrepreneurial setting is established by managing, extending the venture and bringing in new business ideas (Carland *et al.*, 1984; Shook *et al.*, 2003). While venture creation stands at the nexus of lucrative

opportunities and enterprising individuals and is seen as the initial stage in the entrepreneurial process (Venkatraman, 1997), the stages after the launch of a new venture that involve venture growth or value accumulation actions are also considered part of the entrepreneurial process (Shane and Venkataraman, 2000). In this regard, a small minority of scholars (e.g. Lau and Busenitz, 2001; Edelman *et al.*, 2010; Davis and Shaver, 2012) have considered entrepreneurial intentions as growth-oriented intentions. Research papers that examine the core psychological determinants of entrepreneurial intentions are categorised into three groups based on their conceptualisation and measurement of the entrepreneurial intent as indicated in the Table below.

**Table 2.1 Definitional categorisation**

<b>Venture creation intentions</b>	Krueger, 1993b; Crant, 1996; Chen <i>et al.</i> , 1998a; Krueger <i>et al.</i> , 2000; Autio <i>et al.</i> , 2001; Douglas and Shepherd, 2002; Peterman and Kennedy, 2003; Kristiansen and Indarti, 2004; Liñán, 2004; Drennan <i>et al.</i> , 2005; Segal <i>et al.</i> , 2005; Zhao <i>et al.</i> , 2005; Hmieleski and Corbett, 2006; Zampetakis and Moustakis, 2006; Barbosa <i>et al.</i> , 2007; Carr and Sequeira, 2007; de Pillis and Reardon, 2007; Frank <i>et al.</i> , 2007; Liñán and Santos, 2007; Sequeira <i>et al.</i> , 2007; Wilson <i>et al.</i> , 2007; Brice and Nelson, 2008; Gird and Bagraim, 2008; Guerrero <i>et al.</i> , 2008; Liñán, 2008; van Gelderen <i>et al.</i> , 2008; Wu and Wu, 2008; Yar <i>et al.</i> , 2008; Zampetakis, 2008; Boissin <i>et al.</i> , 2009; Kickul <i>et al.</i> , 2009; Liñán and Chen, 2009; McGee <i>et al.</i> , 2009; Pruett <i>et al.</i> , 2009; Turker and Sonmez Selcuk, 2009; Zampetakis <i>et al.</i> , 2009; Carey <i>et al.</i> , 2010; Devonish <i>et al.</i> , 2010; Díaz-García and Jiménez-Moreno, 2010; Drost, 2010; Engle <i>et al.</i> , 2010; Franco <i>et al.</i> , 2010; Gurel <i>et al.</i> , 2010; Kautonen <i>et al.</i> , 2010; Lans <i>et al.</i> , 2010; Naktiyok <i>et al.</i> , 2010; Obschonka <i>et al.</i> , 2010; Shook and Bratianu, 2010; Yordanova and Tarrazon, 2010; Zhao <i>et al.</i> , 2010a; BarNir <i>et al.</i> , 2011; Byabashaija and Katono, 2011; Chuluunbaatar <i>et al.</i> , 2011; do Paço <i>et al.</i> , 2011; Ertuna and Gurel, 2011; Fitzsimmons and Douglas, 2011; Giacomini <i>et al.</i> , 2011; Iakovleva <i>et al.</i> , 2011; Izquierdo and Buelens, 2011; Kautonen <i>et al.</i> , 2011; Lanero <i>et al.</i> , 2011; Liñán <i>et al.</i> , 2011a; Liñán <i>et al.</i> , 2011b; Liñán <i>et al.</i> , 2011c; Mueller, 2011; Smith and Beasley, 2011; Sommer and Haug, 2011; Zellweger <i>et al.</i> , 2011; Almobaireek and Manolova, 2012; Altinay <i>et al.</i> , 2012; Arribas <i>et al.</i> , 2012; de Clercq <i>et al.</i> , 2012; Dehkordi <i>et al.</i> , 2012; Ferreira <i>et al.</i> , 2012; Goethner <i>et al.</i> , 2012; Guzmán-Alfonso and Guzmán-Cuevas, 2012; Hashemi <i>et al.</i> , 2012; Kadir <i>et al.</i> , 2012; Laviolette <i>et al.</i> , 2012; Liargovas and Skandalis, 2012; Mayhew <i>et al.</i> , 2012; Obschonka <i>et al.</i> , 2012; Othman and Mansor, 2012; Solesvik <i>et al.</i> , 2012; Uddin and Kanti Bose, 2012; Bullough and Renko, 2013; Douglas and Fitzsimmons, 2013; Dutta <i>et al.</i> , 2013; Hormiga <i>et al.</i> , 2013; Kautonen <i>et al.</i> , 2013; Kibler, 2013; Laguna, 2013; Liñán <i>et al.</i> , 2013; Loras and Vizcaíno, 2013; Mathieu and St-Jean, 2013; Nabi and Liñán, 2013; Pihie and Bagheri, 2013; Roxas, 2013; Sesen, 2013; Siu and Lo, 2013; Solesvik, 2013a; Tumasjan <i>et al.</i> , 2013; Uygun and Kasimoglu, 2013; Vinogradov <i>et al.</i> , 2013; Volery <i>et al.</i> , 2013; Watchravesringkan <i>et al.</i> , 2013; Wurthmann, 2013; Zhang <i>et al.</i> , 2013
<b>Self-employment intentions</b>	Kolvereid, 1996a; Kolvereid, 1996b; Tkachev and Kolvereid, 1999; Lüthje and Franke, 2003; Kolvereid and Isaksen, 2006; Souitaris <i>et al.</i> , 2007; Iakovleva and Kolvereid, 2009; Plant and Ren, 2010; Zainuddin and Rejab, 2010; Sánchez, 2011; Moriano <i>et al.</i> , 2012; Walter and Dohse, 2012; Walter <i>et al.</i> , 2013
<b>Growth-oriented intentions</b>	Lau and Busenitz, 2001; Cassar, 2007; Edelman <i>et al.</i> , 2010; Fini <i>et al.</i> , 2010; Manolova <i>et al.</i> , 2011; Yordanova, 2011; Davis and Shaver, 2012; de Jong, 2013; Douglas, 2013

## **2.3 Venture creation/Self-employment context**

### **2.3.1 Personality theory**

Ewen (2010) argues that personality originates within the individual and describes the important and relatively stable characteristics that account for consistent patterns of behaviour. In this regard personality includes mental, emotional, social and physical aspects that are observable/unobservable and conscious/unconscious (Ewen, 2010). Traits are considered fundamental and stable units embedded in the individual's personality, which determines behaviours in a wide variety of situations (Krech and Crutchfield, 1958; Smith, 1999). Traits vary among individuals and influence their behaviours accordingly. Therefore, understanding entrepreneurship and who the entrepreneur is has required both trait and behavioural approaches (Carland *et al.*, 1988). In this regard, the entrepreneur was determined and distinguished from others by a set of personality characteristics and behaviours related to entrepreneurial activities and courses of action (Gartner, 1988). Previous research has extensively focused on the role of entrepreneurial characteristics which formulate entrepreneurs' personality and may predict entrepreneurial behaviour (for an overview see (Rauch and Frese, 2007a)).

Scholars have incorporated broad characteristics such as the Big Five personality traits that indicate the role of Conscientiousness, Openness, Emotional stability (or Neuroticism in reverse), Extraversion and Agreeableness in predicting behaviour. Individuals with high levels of conscientiousness are orderly, responsible, dependable individuals who want to maintain high standards of performance and seek ways to fulfil their need for achievement (Llewellyn and Wilson, 2003; John and Srivastava, 2008). The degree to which calm, not neurotic, not easily upset individuals acquire high emotional stability is characterised by high levels of optimism and emotional intelligence (Zhao and Seibert, 2006; John and Srivastava, 2008; Zhao *et al.*, 2010a). Openness is reflected in intellectual, imaginative, independent-minded individuals who place a great value on novelty, challenge and creativity (Zhao and Seibert, 2006; John and Srivastava, 2008). The extraversion dimension characterises talkative, assertive, energetic individuals with a proactive personality, who seek to fulfil their intrinsic needs (Crant, 1996; John and Srivastava, 2008). Agreeableness describes good-natured, co-operative, trustful individuals who base their social interactions on mutual understanding while seeking harmony (Llewellyn and Wilson, 2003; John and

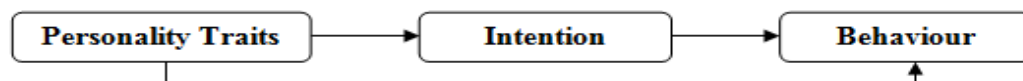
Srivastava, 2008). Zhao and Seibert's (2006) meta-analytical review indicated significant differences between entrepreneurs and managers regarding these dimensions. Their findings indicate that entrepreneurs have higher scores on conscientiousness and openness and lower ones on neuroticism and agreeableness, while no difference was found regarding the extraversion dimension (Zhao and Seibert, 2006). The fact that the generalised big five personality traits are considered as more distal and aggregated constructs of entrepreneurial behaviour has also turned the focus on more specific entrepreneurial traits (Rauch and Frese, 2007b).

Therefore, much of the debate on the characteristics determining entrepreneurial behaviour and differentiating entrepreneurs from the rest of the population has highlighted the need for achievement, risk taking propensity, locus of control and tolerance of ambiguity, among others (Ahmed, 1985; Begley and Boyd, 1987; Cools and Van den Broeck, 2008). In this regard, entrepreneurs have a higher need for achievement as they prefer to choose tasks of moderate difficulty, are willing to get feedback on and commonly accept responsibility for their decisions-actions-outcomes (Rauch and Frese, 2007a). Entrepreneurs perceive the risks inherent in new venture formation in a different way and have a natural propensity to take these risks (Forlani and Mullins, 2000). They have the perception that they are helped by external forces such as destiny or good luck and therefore they can influence their lives in ways that the rest of the population cannot (Begley and Boyd, 1987). What is more, entrepreneurs possessing high tolerance of ambiguity are differentiated in the way they perceive and process information about ambiguous situations and therefore experience less stress, do not react prematurely, perceive ambiguous situations as desirable, challenging, and interesting and neither deny nor distort their complexity or incongruity (Furnham and Ribchester, 1995). Despite the fact that an individual may decide whether to become an entrepreneur based on the information available in his/her environment and on his/her alertness (Minniti, 2004), this high level of ambiguity tolerance may differentiate entrepreneurs from non-entrepreneurs but these differences do not appear to be large (Begley and Boyd, 1987). Considering that many characteristics and entrepreneurial activities are often similar to activities by a group of business owners and managers, it is also rational to declare that entrepreneurs are distinguished from the above group in terms of specific characteristics and behavioural preferences (Carland *et al.*, 1984).

Specifically, entrepreneurs reveal a greater need for achievement and appear to be more risk oriented, in contrast to managers and business owners (Stewart *et al.*, 1999). Thus, entrepreneurs differ from managers (because entrepreneurs not only organise and manage businesses but also take risks for the sake of the profit) and from small business owners (because they articulate venture strategies by focusing on growth and innovation) (Carland *et al.*, 1984).

The unsuccessful attempts to understand the entrepreneur and directly predict and explain entrepreneurial behaviour based solely on entrepreneurial characteristics (Gartner, 1988; Gartner, 1989; Krueger *et al.*, 2000; Mitchell *et al.*, 2002; Krueger, 2003) gave rise to a series of investigations that relate entrepreneurial traits to cognitive structures such as entrepreneurial intentions (see Figure 1). In an attempt to answer “why do many entrepreneurs decide to start a business long before they scan for opportunities”, scholars have only recently started to investigate the indirect link between personality factors and entrepreneurial action via intentions extensively (Bird, 1988; Rauch and Frese, 2007a).

**Figure 2.1 The role of personality**



When it comes to broad personality traits, the more recent meta-analytic review of Zhao *et al.* (2010) based on 60 studies related to the Big Five Personality traits indicates that conscientiousness, openness, emotional stability (or neuroticism in reverse), and extraversion exert a positive influence on entrepreneurial intentions while the expected negative relationship between agreeableness and the formation of venture creation intentions is insignificant. The same findings were presented two years later in Mayhew *et al.*'s (2012) study among university students in the USA when investigating the psychological determinants of creating innovative ventures. However, Obschonka *et al.* (2010) in their study provided evidence regarding a full mediation between the big five personality traits and entrepreneurial intentions among scientists from diverse disciplines in Germany. Three main clarifications are needed regarding their approach. Firstly, in their study they considered the five dimensions of personality as a unified

construct by defining a specific entrepreneurial reference type with the highest possible score in extraversion, conscientiousness, and openness, and the lowest possible score in agreeableness and neuroticism. Secondly, entrepreneurial perceived behavioural control, which acts as a moderator in the relationship between the scientists' total score on the big five personality traits and entrepreneurial intentions, reflects agent-means beliefs (ability-related means such as basic business knowledge, experience in entrepreneurship, prior work experience in industry, context-related means such as state-funded sponsoring initiatives, business contacts, supportive policy of the university/institution and the mean concerning the perception of luck) and agent-ends beliefs (scientists' perceived effectiveness and expectations of success concerning academic entrepreneurship). Thirdly, entrepreneurial intentions are conceptualised as venture creation intentions to commercialise academic research. They also differentiated between conditional and unconditional research, which may or may not have marketing potential for commercialization by a venture. Their findings indicate that the scientists' total big five personality traits construct has only an indirect impact on conditional and unconditional entrepreneurial intentions via entrepreneurial control beliefs.

More research has been conducted in the field of specific personality traits. The incorporation of intentionality as the end outcome in the entrepreneurial process yields contradictory results regarding the verification of the relationship between specific personality traits and entrepreneurial intentions (see Table 2). Scholars have mainly focused on university student samples and concluded that students with high levels of need for achievement (de Pillis and Reardon, 2007; Frank *et al.*, 2007; Ertuna and Gurel, 2011; Dehkordi *et al.*, 2012; Uddin and Kanti Bose, 2012), risk taking propensity (Lüthje and Franke, 2003; Frank *et al.*, 2007; Gurel *et al.*, 2010; Ertuna and Gurel, 2011; Dehkordi *et al.*, 2012; Kadir *et al.*, 2012; Uddin and Kanti Bose, 2012; Tumasjan *et al.*, 2013), locus of control (Lüthje and Franke, 2003; de Pillis and Reardon, 2007; Frank *et al.*, 2007; Kadir *et al.*, 2012; Sesen, 2013), tolerance of ambiguity (Gurel *et al.*, 2010; Dehkordi *et al.*, 2012), need for innovation (Gurel *et al.*, 2010; Altinay *et al.*, 2012; Dehkordi *et al.*, 2012), proactive personality (Crant, 1996) and creative personality (Hmieleski and Corbett, 2006; Zampetakis and Moustakis, 2006; Kadir *et al.*, 2012) will be more inclined towards entrepreneurship by forming stronger intentions to create a new venture. These findings are contradicted by research revealing



that the relationship between the need for achievement (Kristiansen and Indarti, 2004; de Pillis and Reardon, 2007; Altinay *et al.*, 2012; Sesen, 2013), risk taking propensity (Altinay *et al.*, 2012; Hormiga *et al.*, 2013), locus of control (Kristiansen and Indarti, 2004; Gurel *et al.*, 2010; Ertuna and Gurel, 2011; Altinay *et al.*, 2012; Uddin and Kanti Bose, 2012), tolerance of ambiguity (de Pillis and Reardon, 2007; Altinay *et al.*, 2012), the need for innovation (Ertuna and Gurel, 2011), proactive personality, creative personality (Zampetakis, 2008; Zampetakis *et al.*, 2009) and students' entrepreneurial intentions does not exist. More recently, Walter *et al.* (2013) examined the role of gender in the influence of personality characteristics on entrepreneurial intentions by differentiating between male and female university students in Germany. Their study indicates differences regarding the need for achievement, risk taking propensity and need for independence. Particularly, the relationship between need for achievement and entrepreneurial intentions holds only for females while the influence of risk taking propensity and need for independence on the formation of entrepreneurial intentions holds only for males. When it comes to students' opportunity perception and the influence that this may have on their intention to create a new venture the effect was found to be significant for both males and females. Furthermore, Frank *et al.* (2007) argued that secondary school students with higher levels of need for achievement and innovation form higher levels of entrepreneurial intentionality. Volery *et al.*, 2013 in their study show that secondary school students in Sweden who have been engaged in entrepreneurial programmes form new venture creation intentions independently of their need for achievement and innovation propensity. The influence of risk taking propensity on entrepreneurial intentions differs based on whether the students are at the beginning or end of the entrepreneurial course. At the beginning of the entrepreneurial course, students' risk taking propensity did not affect intentions while at the end of the entrepreneurial course entrepreneurial intentions were influenced by the positive effect of students' risk taking propensity (Volery *et al.*, 2013).

Only three studies found in this review went beyond student samples by examining and verifying the link between locus of control among members of the BIGA Chamber of Commerce in diverse industries in Turkey (Uygun and Kasimoglu, 2013) and the need for innovation among employees in the Faculty or Administration Department of a public organisation in Spain (Hormiga *et al.*, 2013). Mathieu and St-Jean (2013) in their

study on employees, white-collar workers and managers in Canada provide evidence regarding the role of narcissistic personality in explaining entrepreneurial intentions, but also the positive influence of risk taking propensity and locus of control on the formation of venture creation intentions.

A more detailed interpretation of the findings presented in Table 2 shows that the relationship between traits and entrepreneurial intentions differed in accordance with the national culture of the country that the participants lived in. For instance, the relationship between proactive personality and entrepreneurial intentions was found to be significant in countries with an individualistic national cultural background such as the USA while controlling for gender, education and family entrepreneurial experience (Crant, 1996) but insignificant in Greece (Zampetakis, 2008; Zampetakis *et al.*, 2009), which is characterised by a collectivistic national culture. Moreover, Gurel *et al.* (2010) (Gurel *et al.*, 2010) in a combined sample of participants with Turkish and English residence suggested that entrepreneurial intentions are influenced by individuals' risk taking propensity and tolerance of ambiguity. When individuals living in Turkey and the UK were examined separately the influence of risk taking propensity was only present in the Turkish sample while the effect of need for innovation was significant only in the UK sample. Differences can also be spotted among countries that have the same cultural orientation. Among individualistic countries, the need for achievement exerts a positive influence on individuals' entrepreneurial intentionality in Austria (Frank *et al.*, 2007) while this relationship did not exist in Ireland (de Pillis and Reardon, 2007). In collectivistic cultures, Kadir *et al.* (2012) suggest that higher levels of locus of control lead to stronger intentions towards venture creation in Malaysia while Uddin and Kanti Bose (2012) argued that the relationship is insignificant in Bangladesh. What is more interesting is that personality influences individuals' intentions differently when one considers findings that are based on the same country. Diverse results regarding the extent to which the relationship between locus of control and venture creation in Turkey (Ertuna and Gurel, 2011; Sesen, 2013; Uygun and Kasimoglu, 2013) or creative personality and entrepreneurial intentions in Greece (Zampetakis and Moustakis, 2006; Zampetakis, 2008; Zampetakis *et al.*, 2009) is present or absent have been reported.

Possible explanations regarding the non-significant effects of traits in entrepreneurial intentions come in the light of mediating variables. In this regard Zampetakis and colleagues (2008, 2009) provide evidence regarding the mediating role of two similar constructs, namely perceived desirability and personal attitude to the relationship of proactive and creative personality with venture creation intentions. In their work they indicate a full mediation where the proactive/creative personality-entrepreneurial intention relationship is insignificant and the proactive/creative personality influences intentions only indirectly via perceived desirability and personal attitude. In an attempt to better understand when certain effects between personality characteristics and entrepreneurial intentions hold, only three studies have examined possible moderating effects. Based on Cassar's (2006) conceptualisation that opportunity costs represent the income that can be earned from paid-employment rather than through self-employment, Hormiga *et al.* (2013) investigated the moderating role of opportunity cost in the relationship between propensity to innovate and entrepreneurial intentions. They found that individuals with lower opportunity cost form stronger intentions towards venture creation. Others have examined the moderating role of higher education in terms of being at the beginning or the end of a university programme. Results reveal no interaction between individuals' education and their need for achievement, locus of control, tolerance of ambiguity and need for innovation (Gurel *et al.*, 2010; Ertuna and Gurel, 2011). Regarding risk taking propensity, results are diverse. Ertuna and Gurel (2011) found that individuals with higher levels of risk taking propensity will form stronger entrepreneurial intention when they enter more mature stages regarding their degree, while the interaction effect was found to be non-significant in Gurel *et al.*'s (2010) study.

**Table 2.2 Main findings regarding the direct relationship between specific personality traits and entrepreneurial intentions**

Year	Authors	Specific Personality Traits										Sample	Residence	Culture	Nationality
		Need for achievement	Risk taking propensity	Locus of control	Tolerance of ambiguity	Innovative Orientation	Need for independence	Opportunity perception	Proactive personality	Creative personality	Narcissistic personality				
1996	Crant, 1996	-	-	-	-	-	-	-	S	-	-	University students	USA	IND	n.i.
2003	Lüthje and Franke, 2003	-	S	S	-	-	-	-	-	-	-	University students (Engineering major)	USA	IND	n.i.
2004	Kristiansen and Indarti, 2004	NS	-	NS	-	-	-	-	-	-	-	University students	Norway	IND	Norway Indonesia
2004	Kristiansen and Indarti, 2004	NS	-	NS	-	-	-	-	-	-	-	University students	Indonesia	COLL	Indonesia
2006	Zampetakis and Moustakis, 2006	-	-	-	-	-	-	-	-	S	-	University students	Greece	COLL	Greece
2006	Hmieleski and Corbett, 2006	-	-	-	-	-	-	-	-	S	-	University students	n.i.	n.i.	Mixed
2007	de Pillis and Reardon, 2007	NS	-	S	S(-)	-	-	-	-	-	-	University students	Ireland	IND	n.i.
2007	de Pillis and Reardon, 2007	S	-	S	NS	-	-	-	-	-	-	University students	USA	IND	n.i.

Year	Authors	Specific Personality Traits										Sample	Residence	Culture	Nationality
		Need for achievement	Risk taking propensity	Locus of control	Tolerance of ambiguity	Innovative Orientation	Need for independence	Opportunity perception	Proactive personality	Creative personality	Narcissistic personality				
2007	Frank <i>et al.</i> , 2007	S	-	-	-	S	-	-	-	-	-	Sec. School students	Austria	IND	n.i.
2007	Frank <i>et al.</i> , 2007	S	S	S	-	-	-	-	-	-	-	University students	Austria	IND	n.i.
2008	Zampetakis, 2008	-	-	-	-	-	-	-	NS	NS	-	University students	Greece	COLL	Greece
2009	Zampetakis <i>et al.</i> , 2009	-	-	-	-	-	-	-	NS	NS	-	University students	Greece	COLL	Greece
2010	Gurel <i>et al.</i> , 2010	-	S	NS	S	S	-	-	-	-	-	University students (Tourism major)	Turkey and UK	COLL- IND	n.i.
2011	Ertuna and Gurel, 2011	S	S	NS	-	NS	-	-	-	-	-	University students (Business and Engineering major)	Turkey	COLL	Turkey
2012	Altinay <i>et al.</i> , 2012	NS	NS	NS	NS	S	-	-	-	-	-	University students (Tourism/Management program)	UK	IND	n.i.
2012	Uddin and Kanti Bose, 2012	S	S	NS	-	-	-	-	-	-	-	University students (Diverse majors)	Bangladesh	COLL	Bangladesh
2012	Dehkordi <i>et al.</i> , 2012	S	S	S	S	S	-	-	-	-	-	University students (Business major)	n.i.	n.i,	n.i.

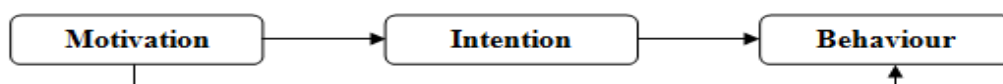
Year	Authors	Specific Personality Traits										Sample	Residence	Culture	Nationality
		Need for achievement	Risk taking propensity	Locus of control	Tolerance of ambiguity	Innovative Orientation	Need for independence	Opportunity perception	Proactive personality	Creative personality	Narcissistic personality				
2012	Kadir <i>et al.</i> , 2012	-	S	S	-	-	-	-	-	S	-	University students (Business Major)	Malaysia	COLL	Malaysia
2013	Uygun and Kasimoglu, 2013	-	-	S	-	-	-	-	-	-	-	Members of Biga	Turkey	COLL	Turkey
2013	Walter <i>et al.</i> , 2013	NS	S	-	-	-	S	S	-	-	-	University students (Males)	Germany	IND	n.i.
2013	Walter <i>et al.</i> , 2013	S	NS	-	-	-	NS	S	-	-	-	University students (Females)	Germany	IND	n.i.
2013	Sesen, 2013	NS	-	S	-	-	-	-	-	-	-	University students	Turkey	COLL	Turkey
2013	Tumasjan <i>et al.</i> , 2013	-	S	-	-	-	-	-	-	-	-	University students (Business/engineering major) Entrepreneurs	Germany	IND	n.i.
2013	Hormiga <i>et al.</i> , 2013	-	NS	-	-	S	-	-	-	-	-	Employees in public organisation	Spain	COLL	n.i.
2013	Mayhew <i>et al.</i> , 2012	-	S	S	-	-	-	-	-	-	S	Employees (white-collar workers and managers)	Canada	IND	n.i.

Note. S = Significant relationship with entrepreneurial intentions, NS = Non-significant relationship with entrepreneurial intentions, (-) indicates a negative relationship, - indicates that the variable was not included in the analysis, n.i. = not indicated in the study, IND = Individualistic culture based on country of residence, COLL = Collectivistic culture based on country of residence

### 2.3.2 Motivation theory

Human motivation was initially approached by Greek philosophers, who stressed the concept of hedonism as a principal driving force in behaviour. It was afterwards refined and developed by philosophers and finally passed from the philosophical to the psychological realm, which focused on empirically based psychological models to explain motivation and link it to behaviour (Steers *et al.*, 2004). In this regard, motivation concerns the process that determines the direction, arousal, amplitude, and persistence of an individual's decisions and behaviour that cannot be explained by ability alone (Campbell and Pritchard, 1976; London, 1983). In other words, motivation describes the theoretical lenses that explain why an individual decides to engage in a given behaviour. In psychology a number of motivation theories can be found that concentrate either on the content or the process (Ryan, 2012). In an attempt to better understand entrepreneurial behaviour, research has focused on Vroom's (1964) expectancy theory by arguing that individuals form entrepreneurial intentions and consequently decide to engage in entrepreneurial behaviours based on specific rewards that they expect to gain and which are believed to fulfil their personal needs and desires (see Figure 2).

**Figure 2.2 The role of motivation**



Scholars have also put forward dualist theories about motivation, such as the intrinsic - extrinsic motivation theory (Deci and Ryan, 1985; Reiss, 2004; Reiss, 2012). According to this theory the motives that explain human decision and behaviour, in other words the reasons that individuals give regarding the decision to engage in a given behaviour, can be either intrinsic, reflecting intrinsic interests related to inherent satisfaction rather than separable consequences, external prods, pressures, rewards, and/or extrinsic, revealing extrinsic interests that relate to instrumental values and rewards (Ryan and Deci, 2000b). Considering that behaviour is determined by a combination of intrinsic-extrinsic motives/reasons (Walker and Webster, 2007; Carsrud and Brännback, 2011), Carter *et al.* (2003) highlighted how the decision to engage in

entrepreneurial activities and become an entrepreneur is influenced by six motivational groups related to: financial success (Birley and Westhead 1994; Cassar 2007; Kirkwood 2009), independence (Birley and Westhead 1994; Cassar 2007; Amit *et al.* 2001; Kirkwood 2009), innovation (Birley and Westhead 1994; Amit *et al.* 2001; Cassar 2007), recognition (Birley and Westhead 1994; Cassar 2007), self-realisation/challenge (Cassar 2007; Amit *et al.* 2001; Kirkwood 2009) and role models (Birley and Westhead, 1994).

When it comes to the relationship between motives and the formation of entrepreneurial intentions the reviewed articles (see Table 3) show common findings regarding the positive influence of independence / autonomy (Kolvereid, 1996a; Kolvereid, 1996b; Tkachev and Kolvereid, 1999; Douglas and Shepherd, 2002; Brice and Nelson, 2008; van Gelderen *et al.*, 2008; Pruett *et al.*, 2009; Franco *et al.*, 2010; Giacomini *et al.*, 2011; Volery *et al.*, 2013), role models (Franco *et al.*, 2010), authority (Kolvereid, 1996a; Kolvereid, 1996b; Tkachev and Kolvereid, 1999), innovation (Smith and Beasley, 2011), the current situation in the labour market / professional dissatisfaction (Franco *et al.*, 2010; Giacomini *et al.*, 2011), and social value (Arribas *et al.*, 2012) on students' intentions to create a new venture and the non-significant relationship between creativity (Pruett *et al.*, 2009) and entrepreneurial intentions.

Diverse results regarding the influence of specific motives on the formation of venture creation intentions among students have been found in the literature. Particularly, rewards related to financial success / financial security / economic opportunity (Kolvereid, 1996a; Kolvereid, 1996b; Tkachev and Kolvereid, 1999; van Gelderen *et al.*, 2008; Plant and Ren, 2010; Giacomini *et al.*, 2011; Smith and Beasley, 2011), work life balance / work load avoidance / satisfying way of life (van Gelderen *et al.*, 2008), fun / enjoyment in the entrepreneurial process (Plant and Ren, 2010; Smith and Beasley, 2011) positively affected students' intentions to enter entrepreneurship. Despite the positive relationship between recognition (Giacomini *et al.*, 2011), self-realisation / self-actualisation / challenge (Kolvereid, 1996a; Kolvereid, 1996b; Tkachev and Kolvereid, 1999; van Gelderen *et al.*, 2008; Franco *et al.*, 2010; Giacomini *et al.*, 2011; Smith and Beasley, 2011), Franco *et al.* (2010) and Plant and Ren (2010) provided evidence that the relationships are significant but the expected aforementioned rewards were negatively correlated with the formation of students' entrepreneurial



intentions. However, scholars have also argued that students do not intend to engage in entrepreneurial activities for reasons related to recognition (Franco *et al.*, 2010), self-realisation / self-actualisation / challenge (Watchravesringkan *et al.*, 2013), financial success / financial security / economic opportunity (Pruett *et al.*, 2009; Franco *et al.*, 2010), work life balance / work load avoidance / satisfying way of life (Brice and Nelson, 2008; Franco *et al.*, 2010; Plant and Ren, 2010) and fun / enjoyment in the entrepreneurial process (Franco *et al.*, 2010). Volery *et al.* 2013 in their study conclude that Swiss secondary school students acquire higher levels of entrepreneurial intentions due to the influence of their need for autonomy on intentions only at the beginning of the entrepreneurial course, while at the end of the entrepreneurial course the autonomy-intention relationship becomes non-significant.

While the majority of studies have focused on student sample groups in order to determine the role of motivation on the formation of entrepreneurial intentions, two studies found in this review, namely Liargovas and Skandalis (2012) and Kautonen *et al.* (2013), examined the proposed influences among immigrant entrepreneurs in Greece and non-entrepreneurs in the working age population aged 18-64 in Finland. Both studies found that individuals are more inclined towards entrepreneurship by forming entrepreneurial intentions when they are motivated to gain monetary returns through their engagement in entrepreneurship and independence as they expect to become their own boss at work (Liargovas and Skandalis, 2012; Kautonen *et al.*, 2013). In addition, Liargovas and Skandalis (2012) showed that dissatisfaction with paid-employment in terms of general national labour market conditions positively influences immigrants' intention to create their own venture, while Kautonen *et al.* (2013) found that individuals form entrepreneurial intentions due to their desire to challenge/develop themselves and gain authority.

Scholars have recently examined the mediating role of personal attitude, subjective norms and perceived behavioural control on the relationship between motives and entrepreneurial intentions. Solesvik (2013) suggests a full mediation effect where perceived entrepreneurial motivation is positively associated with personal attitude, subjective norms and perceived behaviour control towards entrepreneurship, which in turn is positively related to higher levels of business and engineering students' entrepreneurial intentions in Ukraine. In the same vein, Watchravesringkan *et al.* (2013)

proposed and provided evidence in support of the view that students' desire to gain "self-actualisation" rewards through entrepreneurship influences their entrepreneurial intentions only indirectly via the formation of positive perceptions towards entrepreneurship, and that this relationship appears to be stronger for those students that have acquired high levels of perceived entrepreneurial knowledge. Based on the fact that extrinsic and intrinsic motives are considered as inter-related and inner-related constructs of human motivation, Brice and Nelson (2008) examined interaction effects between extrinsic and intrinsic rewards in determining students' entrepreneurial intention. They provided evidence that the reward of "profit" moderates the relationship between the reward of a "satisfying way of life" and entrepreneurial intentions in such a way that the relationship has been strengthened significantly (Brice and Nelson, 2008).

Previous findings also indicate the role of culture and how this may determine the reasons why individuals engage in entrepreneurial activities and the effect on the formation of venture creation intentions. Diverse results regarding the influence of motives on entrepreneurial intentions have been found between individuals with residence in collectivistic and individualistic cultures. Particularly, financial success had a positive relationship with entrepreneurial intentions in Russia (Tkachev and Kolvereid, 1999) while the relationship was insignificant in the USA and Germany (Pruett *et al.*, 2009; Franco *et al.*, 2010). In the same vein, the relationship between self-realization/self-actualization/challenge and venture creation intentions was established in Russia (Tkachev and Kolvereid, 1999) while this was not the case in the USA (Watchravesringkan *et al.*, 2013). These findings indicate that differences exist among diverse cultural backgrounds in terms of the rewards that individuals may expect to gain through entrepreneurship. Even in individualistic cultures the presence of inconsistent findings reveals that the diversification of cultural dimensions in the form of personal cultural values plays a crucial role in the way that individuals form higher levels of entrepreneurial motivation that leads to the formation of entrepreneurial intention. In this regard, it should be pointed out that the findings indicate a non-significant financial success - entrepreneurial intentionality relationship in Germany and the USA (Pruett *et al.*, 2009; Franco *et al.*, 2010), in contrast to Finland, the Netherlands, Norway, and the UK (Kolvereid, 1996a; Kolvereid, 1996b; Douglas and Shepherd, 2002; van Gelderen *et al.*, 2008; Smith and Beasley, 2011; Kautonen *et al.*, 2013). Similar conclusions can

be drawn if one compares the findings regarding the relationship between self-realization/self-actualization/challenge and entrepreneurial intentionality in the USA (Watchravesringkan *et al.*, 2013) versus Finland, Germany, the Netherlands, Norway, and the UK (Kolvereid, 1996a; Kolvereid, 1996b; Douglas and Shepherd, 2002; van Gelderen *et al.*, 2008; Franco *et al.*, 2010; Smith and Beasley, 2011; Kautonen *et al.*, 2013). The observational interpretations of the findings presented in Table 3 indicate that in Germany and the USA (Pruett *et al.*, 2009; Franco *et al.*, 2010) the influence of a) work life balance b) work load avoidance and c) satisfying way of life motivation on venture creation intentions is significant while this relationship is absent in the Netherlands (van Gelderen *et al.*, 2008). A more detailed cross-national comparison based on Giacomini *et al.*'s (2011) work indicated that cross-cultural differences play a crucial role in determining the strength of motives on entrepreneurial intentions among Americans and Belgians (individualistic cultures), Chinese, Indian and Spanish respondents (collectivistic cultures).

**Table 2.3 Main findings regarding the direct relationship between motives/reasons and entrepreneurial intentions**

Year	Authors	Motives/Reasons												Sample	Residence	Culture	Nationality
		Financial success-security Economic opportunity	Independence, Autonomy	Innovation	Recognition	Self-realisation, Self- actualisation, Challenge	Role models	Authority	Work life balance, Work load avoidance, Satisfying way of life	Creativity	Current situation in market Professional dissatisfaction	Social value	Fun/Enjoyment in the process/risk/control				
1996	Kolvereid, 1996a	S	S	-	-	S	-	S	-	-	-	-	S	University graduates (Business major)	Norway	IND	n.i.
1996	Kolvereid, 1996b	S	S	-	-	S	-	S	-	-	-	-	S	University graduates (Business major)	Norway	IND	n.i.
1999	Tkachev and Kolvereid, 1999	S	S	-	-	S	-	S	-	-	-	-	-	University students (Diverse majors)	Russia	COLL	Russia
2002	Douglas and Shepherd, 2002	-	S	-	-	-	-	-	-	-	-	-	-	University students (Business major)	Australia	IND	n.i.
2008	van Gelderen <i>et al.</i> , 2008	S	S	-	-	S	-	-	S	-	-	-	-	University students (Business)	Netherlands	IND	n.i.

Year	Authors	Motives/Reasons												Sample	Residence	Culture	Nationality
		Financial success-security Economic opportunity	Independence, Autonomy	Innovation	Recognition	Self-realisation, Self- actualisation, Challenge	Role models	Authority	Work life balance, Work load avoidance, Satisfying way of life	Creativity	Current situation in market Professional dissatisfaction	Social value	Fun/Enjoyment in the process/risk/control				
2008	Brice and Nelson, 2008	S	S	-	-	-	-	-	NS	-	-	-	-	University students (Business major)	n.i.	n.i.	n.i.
2009	Pruett <i>et al.</i> , 2009	NS	S	-	-	-	-	-	NS	NS	-	-	-	University students	USA Spain China	IND	USA Spain China
2010	Franco <i>et al.</i> , 2010	NS	S	-	NS	S	S	-	NS	-	S	-	NS	University students	Germany Portugal	IND	n.i.
2010	Plant and Ren, 2010	S	-	-	S (-)	S (-)	-	-	-	-	-	-	S	University students (Business major)	China USA	COLL- IND	n.i.
2011	Giacomin <i>et al.</i> , 2011	S	S	-	S	S	-	-	-	-	S	-	-	University students Diverse majors	Mixed	COLL- IND	Mixed

Year	Authors	Motives/Reasons												Sample	Residence	Culture	Nationality	
		Financial success-security Economic opportunity	Independence, Autonomy	Innovation	Recognition	Self-realisation, Self- actualisation, Challenge	Role models	Authority	Work life balance, Work load avoidance, Satisfying way of life	Creativity	Current situation in market Professional dissatisfaction	Social value	Fun/Enjoyment in the process/risk/control					
2011	Smith and Beasley, 2011	S	-	S	-	S	-	-	-	-	-	-	S	University graduates	UK	IND	n.i.	
2012	Arribas <i>et al.</i> , 2012	-	-	-	-	-	-	-	-	-	-	-	S	-	University students	Spain	COLL	n.i.
2012	Liargovas and Skandalis, 2012	S	S	-	-	-	-	-	-	-	-	S	-	-	Immigrant entrepreneurs	Greece	COLL	Mixed
2013	Watchravesringkan <i>et al.</i> , 2013	-	-	-	-	NS	-	-	-	-	-	-	-	-	University students	USA	IND	n.i.
2013	Volery <i>et al.</i> , 2013	-	S	-	-	-	-	-	-	-	-	-	-	-	Sec. School students	Sweden	IND	Sweden
2013	Kautonen <i>et al.</i> , 2013	S	S	-	-	S	-	S	-	-	-	-	-	-	Non-entrepreneurs (18–64 years old)	Finland	IND	n.i.

Note. S = Significant relationship with entrepreneurial intentions, NS = Non-significant relationship with entrepreneurial intentions, (-) indicates a negative relationship, - indicates that the variable was not included in the analysis, n.i. = not indicated in the study, IND = Individualistic culture based on country of residence, COLL = Collectivistic culture based on country of residence

### 2.3.3 Self-efficacy theory

The term self-efficacy is derived from Bandura's (1977, 1986) Social learning theory embedded in Social Cognitive Theory and refers to individuals' cognitive estimates regarding the capabilities that are needed in order to organise and execute courses of action, meet given situational demands, manage prospective situations and exercise control over events in their lives (Bandura, 1977; Bandura, 1982; Bandura, 1989; Wood and Bandura, 1989; Bandura, 1995a; Bandura, 1995b; Bandura, 1997). In other words, self-efficacy reflects individuals' beliefs about whether they can accomplish specific tasks and activities by using their personal abilities under certain circumstances (Snyder and Lopez, 2011).

Self-efficacy is acquired gradually through the development of complex cognitive, social, linguistic, and/or physical skills (Bandura, 1982; Gist, 1987). In order to assess their efficacy and determine whether they have the capacity to perform a given behaviour, individuals recall fundamental information related to successful or unsuccessful outcomes of personal previous experiences (mastery experiences), success and failure of their social network in accomplishing specific tasks related to the given behaviour (vicarious experiences), social cycle encouragement or discouragement pertaining to their ability to perform the given behaviour (verbal persuasion) and finally stress, fatigue, agitation, bad mood, aches or pains that they expect or not to obtain from their engagement in the given behaviour (physiological and psychological arousal) (Bandura, 1977; Bandura, 1986; Peterson and Arnn, 2005)

While this information is interrelated and considered simultaneously, individuals do not directly convert information into judgments. Instead, it is the interpretation of the information that provides the basis on which judgements are made and levels of self-efficacy are determined (Bandura, 1982; Bandura, 1994). Self-efficacy levels are based on individuals' perceptions regarding the level of ease or difficulty that they may face when performing the task/behaviour (self-efficacy magnitude), how convinced individuals are about their ability to accomplish the task/behaviour successfully (self-efficacy strength) and the degree to which individuals think that their expectations can be generalised across diverse situations (self-efficacy generality) (Bandura *et al.*, 1980).

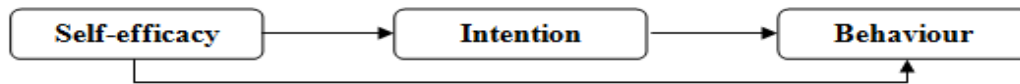
Bandura (1999), in his conceptualisation, clearly argues that the self-efficacy construct in the social cognitive theory is different from constructs related to trait theory

such as self-esteem, which reflects individuals' characteristics and affective evaluations of the self (Gist and Mitchell, 1992). Considering that dynamic self-efficacy dispositions are distinguished from static trait dispositions, self-efficacy dispositions change across different activity domains and under different situational demands and represent personal factors (self-beliefs, aspirations, outcome expectations) that regulate behaviour, while trait dispositions are seen as descriptors of habitual behaviour (Bandura, 1999).

Individuals' belief systems concerned with how they construe their abilities will affect their cognitive, affective and behavioural functioning (Dweck and Leggett, 1988; Bandura, 1993). Individuals with high levels of self-efficacy approach difficult tasks as challenging rather than threatening and tend to choose situations in which they anticipate high personal control but avoid situations in which they anticipate low control (Bandura, 1977; Bandura and Schunk, 1981; Bandura, 1982; Wood and Bandura, 1989; Axtell and Parker, 2003). Human function is explained in the Triadic Reciprocal Determinism model (Wood and Bandura, 1989), which postulates an interrelation among behavioural factors, cognitive and other personal factors, and environmental factors. These influencing factors are not of equal strength, nor do they all occur concurrently but they interact in order to determine behaviour (Bandura, 1977; Bandura, 1986; Wood and Bandura, 1989). In this regard, self-efficacy beliefs determine "how people feel, think, motivate themselves and behave" (Bandura, 1999). The basic principle of Self-efficacy Theory is that individuals are more likely to perform a certain behaviour for which they have high self-efficacy and are less likely to act if the behaviour is perceived to be beyond the ability (Bandura, 1991). In the human behaviour context positive or negative perceptions of self-efficacy that are fostered through the utilization, combination, sequencing of their skills, knowledge and competences may explain why individuals who even have the same abilities to perform a given behaviour may act differently (Gist and Mitchell, 1992). Given that self-efficacy perceptions are depicted as direct predictors of intentions the same explanatory argumentation regarding the role of higher or lower levels of capabilities perceptions also applies in determining the formation of individuals' strong or weak intentions towards a given behaviour, as indicated in Figure 3 (Ryan, 1970; Bandura, 1997).



**Figure 2.3 The role of self-efficacy**



According to Bandura (1991) capability self-perceptions also play a crucial role in the development and change of choice processes in terms of the setting the course of their life paths and deciding what they will become (Bandura, 2012). Individuals plan and choose their career paths based on self-efficacy personal assessments while choosing to enter occupations in which they feel self-confident regarding the capabilities that they have acquired or try to avoid occupations in which they consider that their capabilities are not sufficient for the given occupation (Betz and Hackett, 1981; Anderson and Betz, 2001). Based on this conceptualisation, research in the entrepreneurial domain has focused on examining the role of self-efficacy in the decision to choose entrepreneurship by arguing that individuals with higher levels of entrepreneurial self-efficacy are more likely to become entrepreneurs. When self-efficacy concerns individuals' perceptions regarding their capabilities to engage in roles-tasks-activities related to entrepreneurial behaviours successfully, it is referred to as Entrepreneurial Self-Efficacy (ESE) (Boyd and Vozikis, 1994; Krueger and Brazeal, 1994; Chen *et al.*, 1998a; McGee *et al.*, 2009)

The positive relationship between individuals' entrepreneurial self-efficacy and entrepreneurial intentions has been widely tested and is well-established (see Table 4). Scholars have provided evidence that undergraduate and postgraduate university students who feel capable of engaging in entrepreneurial activities have acquired higher levels of entrepreneurial intentions (Chen *et al.*, 1998a; Kickul *et al.*, 2009; BarNir *et al.*, 2011; Izquierdo and Buelens, 2011; Sánchez, 2011; Hashemi *et al.*, 2012). Previous research (Kristiansen and Indarti, 2004; Zhao *et al.*, 2005; Barbosa *et al.*, 2007; de Pillis and Reardon, 2007; Yar *et al.*, 2008; Turker and Sonmez Selcuk, 2009; Drost, 2010; Lans *et al.*, 2010; Naktiyok *et al.*, 2010; Zainuddin and Rejab, 2010; Byabashaija and Katono, 2011; Zellweger *et al.*, 2011; Laviolette *et al.*, 2012; Douglas and Fitzsimmons, 2013; Pihie and Bagheri, 2013; Sesen, 2013) has also verified the positive self-efficacy - intention relationship among university students in different geographical regions (Austria, Belgium, China, Finland, France, Germany, Hungary, India, Indonesia,

Ireland, Malaysia, Netherlands, New Zealand, Norway, Russia, Sweden, Switzerland, Thailand, Turkey, Uganda and USA). In Turkey, Naktiyok *et al.* (2010) examined diverse self-efficacy constructs related to undergraduate students' perceptions of specific abilities and skills. Their findings indicate that students' confidence in developing new product and market opportunities, coping with unexpected challenges and defining core purposes increases their intention to engage in venture creation activities. However, the link between students' perceptions regarding their ability to build an innovative environment, develop critical human resources and initiate investor relationships and entrepreneurial intentions has not been confirmed. Kickul *et al.* (2009) postulate that the strength of the relationship between entrepreneurial self-efficacy at the different entrepreneurial process stages and entrepreneurial intentions may differ depending on students' cognitive styles. They differentiate between intuitive and analytical styles. The former reveals a thinking mode where individuals' information processing is based on a quick, natural, synthetic and holistic manner, while the latter reflects a thinking mode where individuals rely on linear, sequential and systematic processing of information (Olson, 1985; Allinson and Hayes, 1996; Allinson *et al.*, 2000). Their findings indicate that the entrepreneurial self-efficacy-intention relationship is stronger for individuals with an intuitive cognitive style at the searching stage of the entrepreneurial process (new entrepreneurial opportunity conception and identification). However, at the planning (business plan preparation), marshalling (seeking financing, attracting investors, persuading others to collaborate) and implementing stage (launching, managing, and growing the new venture) the relationship will be stronger for individuals with an analytical cognitive style. Wilson *et al.* (2007) and Kickul *et al.* (2008) found that both male and female American secondary school students' perceptions regarding their ability to create a new venture influence their entrepreneurial intentions in such a way that higher levels of entrepreneurial self-efficacy lead to higher levels of entrepreneurial intentionality. The only exceptions that have failed to indicate that entrepreneurial self-efficacy exerts a positive influence on the formation of entrepreneurial intention come from Tumasjan *et al.* (2013) and Volery *et al.*'s, 2013 previous work among university students in Germany and secondary school students in Sweden respectively.

Despite the fact that research regarding the link between entrepreneurial self-efficacy and intentions has mainly focused on student samples, a small amount of studies confirmed the relationship by utilising data from different sample groups. Feranandez *et al.* (2009), using the GEM dataset, found that the proportion of potential entrepreneurs is higher in Scandinavian countries (Denmark, Finland, Sweden) than in Mediterranean ones (Greece, Italy, Portugal, Spain) and argued that the entrepreneurial self-efficacy-intention relationship holds among individuals in both European regions. Scholars have utilised joint samples of immigrants and non-immigrants in USA (Sequeira *et al.*, 2007) or entrepreneurs and non-entrepreneurs in USA and Afghanistan (Bullough and Renko, 2013) and confirmed that higher levels of entrepreneurial self-efficacy increase the likelihood of entrepreneurial intentions. The relationship has also been verified in sample groups of individuals aged 18-50 years old in Afghanistan (Bullough *et al.*, 2013), unemployed individuals (Laguna, 2013), individuals who have already expressed an interest in starting their own venture and have been already engaged in a business start-up activity (McGee *et al.*, 2009) and, finally, individuals in 13 countries (GEM dataset) who have never been engaged in entrepreneurial activities (Liñán *et al.*, 2011b).

Previous research has also explored the reasons why and the conditions under which the relationship between entrepreneurial self-efficacy and intention holds by examining mediating and moderating effects. Based on Higgins's (1988) (Higgins, 1998) Self-Regulation Theory and Bandura's (2012) proposed structural path model, Pihie and Bagheri (2013) examined the mediating role of self-regulation focus in the self-efficacy-intention relationship. In their study, Malaysian university students who feel confident about their ability to engage in entrepreneurial activities have an increased ability to direct their thoughts towards accomplishing entrepreneurial behaviours by following a promotion focus and are therefore more inclined towards entrepreneurship by forming stronger entrepreneurial intentions. Krueger *et al.* (2000) provided evidence regarding the indirect link between perceived entrepreneurial self-efficacy and entrepreneurial intentions by incorporating the construct in Ajzen's Theory of Planned Behaviour (Ajzen, 1991) and in Shapero and Sokol's Entrepreneurial Event Model (Shapero and Sokol, 1982). They argue that high levels of entrepreneurial self-efficacy positively influence individuals' perceived behavioural control/perceived feasibility, which in turn

leads to the formation of stronger entrepreneurial intentions. Laviollete *et al.* (2012) examined the impact of “role model’s gender” and found that the female role model generated a stronger moderating effect on the entrepreneurial self-efficacy-intention relationship among women than did the male role model for men in a sample of university students in France. Their work has also explored the moderating effect of “framing”, in other words, the impact of positive and negative same-gender role models in the relationship between entrepreneurial self-efficacy and intentions. They provided evidence that the relationship is stronger if university students have both positive and negative testimonials from their role models. The former advocate positive outcomes gained through entrepreneurship and pull individuals into forming entrepreneurial intentions while the latter present obstacles that have to be defeated and errors that have to be avoided (Bandura, 1986). Bullough and Renko (2013) and Bullough *et al.* (2013) explored and found confirmation for the moderating effect of “resilience” in the relationship between entrepreneurial self-efficacy and entrepreneurial intention in entrepreneurs/non-entrepreneurs and a sample of 18-50 year old individuals. In particular, under such severe environmental conditions as those faced in Afghanistan, individuals’ entrepreneurial self-efficacy will exert a stronger effect on entrepreneurial intentions when they have the ability to adopt positive emotions after adversity and go on with their lives. The moderating effect was not confirmed for the entrepreneurs/ non-entrepreneurs sample in USA (Bullough and Renko, 2013). Finally, Wilson (2007) explored the moderating effect of “gender” on the entrepreneurial self-efficacy-intention relationship but the proposed interaction effects were not confirmed in a sample of middle/high school students in four geographical areas in USA.

**Table 2.4 Main findings regarding the direct relationship between entrepreneurial self-efficacy and entrepreneurial intentions**

Year	Authors	ESE-EI	Sample	Residence	COLL/IND	Nationality
1998	Chen <i>et al.</i> , 1998a	S	University students (Diverse majors) SME executives-managers	n.i.	n.i.	n.i.
2004	Kristiansen and Indarti, 2004	S	University students	Norway	IND	Norway
2004	Kristiansen and Indarti, 2004	S	University students	Indonesia	COLL	Indonesia
2005	Zhao <i>et al.</i> , 2005	S	University students (Business major)	USA	IND	n.i.
2007	Barbosa <i>et al.</i> , 2007	S	University students (entrepreneurial courses)	Russia Norway and Finland	IND-COLL	n.i.
2007	de Pillis and Reardon, 2007	S	University students (Business major)	USA Ireland	IND	USA Ireland
2007	Wilson <i>et al.</i> , 2007	S	Secondary/University students (Business major)	USA	COLL	n.i.
2007	Sequeira <i>et al.</i> , 2007	S	Immigrants and non-immigrants (employees, entrepreneurial seminar participants and students)	USA	COLL	n.i.
2008	Kickul <i>et al.</i> , 2008	S	Secondary students	USA	COLL	n.i.
2008	Yar <i>et al.</i> , 2008	S	University students (Diverse majors; entrepreneurial and non-entrepreneurial courses)	Sweden	IND	n.i.
2009	Fernández <i>et al.</i> , 2009	S	GEM	Mediterranean Scandinavian region	IND-COLL	n.i.

Year	Authors	ESE-EI	Sample	Residence	COLL/IND	Nationality
2009	Kickul <i>et al.</i> , 2009	S	University students (Business major)	n.i.	n.i.	n.i.
2009	Turker and Sonmez Selcuk, 2009	S	University students	Turkey	COLL	n.i.
2009	McGee <i>et al.</i> , 2009	S	Nascent entrepreneurs	n.i.	n.i.	n.i.
2010	Drost, 2010	S	University students	Finland	IND	n.i.
2010	Lans <i>et al.</i> , 2010	S	University students (entrepreneurial courses)	Netherlands	IND	n.i.
2010	Naktiyok <i>et al.</i> , 2010	S	University students (Business major)	Turkey	COLL	n.i.
2010	Zainuddin and Rejab, 2010	S	University students (entrepreneurial courses)	Malaysia	COLL	Malaysia
2011	BarNir <i>et al.</i> , 2011	S	University students (Business major)	n.i.	n.i.	n.i.
2011	Izquierdo and Buelens, 2011	S	University students (entrepreneurial and non-entrepreneurial courses)	n.i.	n.i.	n.i.
2011	Byabashaija and Katono, 2011	S	University students	Uganda	COLL	Uganda
2011	Sánchez, 2011	S	University students (entrepreneurial and non-entrepreneurial courses)	n.i.	n.i.	n.i.
2011	Zellweger <i>et al.</i> , 2011	S	University students (with family business background)	Mixed	IND	n.i.
2011	Liñán <i>et al.</i> , 2011b	S	GEM (potential entrepreneurs not nascent entrepreneurs)	n.i.	n.i.	n.i.

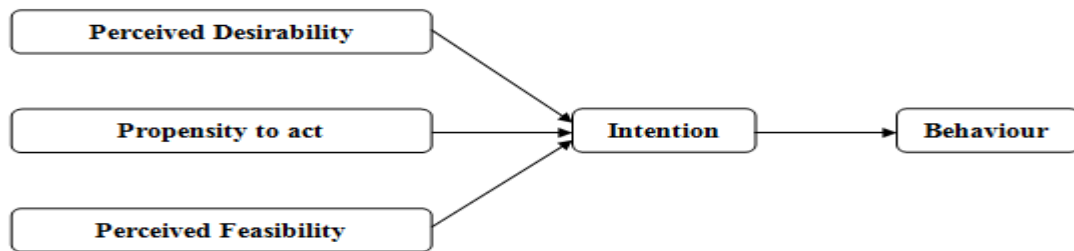
Year	Authors	ESE-EI	Sample	Residence	COLL/IND	Nationality
2012	Hashemi <i>et al.</i> , 2012	S	University students (Agriculture major)	n.i.	n.i.	n.i.
2012	Laviolette <i>et al.</i> , 2012	S	University students (Business major; entrepreneurial courses)	France	IND	n.i.
2013	Douglas and Fitzsimmons, 2013	S	University students (Diverse majors; entrepreneurial and non-entrepreneurial courses)	Australia China, India and Thailand	IND-COLL	n.i.
2013	Pihie and Bagheri, 2013	S	University students (entrepreneurial courses)	Malaysia	COLL	n.i.
2013	Sesen, 2013	S	University students	Turkey	COLL	Turkey
2013	Tumasjan <i>et al.</i> , 2013	NS	University students (Business and engineering major) Entrepreneurs	Germany	IND	n.i.
2013	Volery <i>et al.</i> , 2013	NS	Secondary students	Sweden	IND	Sweden
2013	Bullough and Renko, 2013	S	Entrepreneurs and non-entrepreneurs	Afghanistan and USA	IND-COLL	n.i.
2013	Bullough <i>et al.</i> , 2013	S	Individuals leaving in Afghanistan (18-50 years old)	Afghanistan	COLL	Afghanistan
2013	Laguna, 2013	S	Unemployed individuals	n.i.	n.i.	n.i.

*Note.* ESE = Entrepreneurial Self-Efficacy, EI = Entrepreneurial Intention, S = Significant relationship with entrepreneurial intentions, NS = Non-significant relationship with entrepreneurial intentions, - indicates that the variable was not included in the analysis, n.i. = not indicated in the study, IND = Individualistic culture based on country of residence, COLL = Collectivistic culture based on country of residence

### 2.3.4 Entrepreneurial Event Model

Shapero and Sokol's (1982) Entrepreneurial Event Model (EEM) postulates that individuals' intentions to act entrepreneurially derive from their perceptions of desirability, propensity to act upon opportunities and perceptions of feasibility (Figure 4). Perceived desirability refers to individuals' perceptions that entrepreneurship is attractive, propensity to act refers to individuals' tendency to engage in entrepreneurial activities and perceived feasibility refers to individuals' perceptions that they are capable of performing the entrepreneurial behaviour (Krueger, 1993b). According to the model, individuals with higher levels of propensity to act, perceived desirability and perceived feasibility will acquire higher levels of entrepreneurial intentions and consequently will be more inclined towards performing the entrepreneurial behaviour (Shapero and Sokol, 1982).

**Figure 2.4 Entrepreneurial Event Model (Shapero and Sokol, 1982)**



In the past two decades, only two studies (Krueger, 1993b; Krueger *et al.*, 2000) have holistically examined Shapero's model by verifying the positive influence of university students' desirability perceptions, feasibility perceptions and propensity to act on their intention to act entrepreneurially, as indicated in Table 5. Scholars have mainly provided evidence regarding the positive effects of perceived desirability and perceived feasibility on entrepreneurial intentions in undergraduate and postgraduate university student samples (Drennan *et al.*, 2005; Liñán and Santos, 2007; Dirk de Clercq *et al.*, 2012) and focused on universities in the Caribbean, Philippines, Uganda, Ukraine and USA (Segal *et al.*, 2005; Iakovleva and Kolvereid, 2009; Devonish *et al.*, 2010; Byabashaija and Katono, 2011; Solesvik *et al.*, 2012; Dutta *et al.*, 2013; Roxas, 2013; Wurthmann, 2013). While the relationships have been verified in a combined sample of MBA students in Australia, China, India and Thailand who participated in



entrepreneurial courses (Fitzsimmons and Douglas, 2011), the positive influence of perceived feasibility on entrepreneurial intentions was found to be insignificant when examined in a sample of university students in China (Zhang *et al.*, 2013). In Spain, Loras and Vizcaino (2013) found that civil engineering students rarely consider starting their own venture and although they perceive entrepreneurship as a desirable occupational option, they do not feel confident about their entrepreneurship related skills. Guerrero *et al.* (2008), on the other hand, found that credibility, a construct reflecting and measuring perceived desirability and feasibility, increased entrepreneurial intentions in a combined sample of students in entrepreneurial, non-entrepreneurial and engineering majors in Catalonia. Lanero *et al.* (2011) found that Spanish university students who feel confident in engaging in entrepreneurial activities will demonstrate higher levels of entrepreneurial intention, while this was not the case regarding the effect of students' perceived desirability and their intention to act entrepreneurially. In Germany, Tumasjan *et al.* (2013) provided evidence regarding the positive influence of perceived desirability and feasibility on students' intentions to exploit opportunities. They also confirmed the aforementioned relationships in a non-student sample of entrepreneurs. In contrast, Chuluunbaatar *et al.* (2011) provided evidence only for the significant relationship between perceived desirability and entrepreneurial intentions in a combined sample of entrepreneurs from China and Mongolia. The link between entrepreneurs' perceived feasibility and their entrepreneurial intentions was not confirmed. In Sweden, Volery *et al.* (2013) provided evidence regarding Shapero's model among secondary school students that have participated in entrepreneurial activities. Their findings indicate that the positive relations between desirability/feasibility and entrepreneurial intentions hold both at the beginning and the end of the entrepreneurial programme.

Scholars have focused on the role of cognitive and situational factors in an attempt to explain when certain effects of individuals' desirability and feasibility on entrepreneurial intentions hold. Particularly, De Clercq *et al.* (2012) examined the moderating role of learning orientation and passion for work on the perceived desirability-intention relationship and perceived feasibility-intention relationship in a sample of university students with no previous entrepreneurial experience. They found that the relationship between desirability/feasibility and intentions is stronger when

students are more inclined towards upgrading their existing knowledge base and approach work as something that they love and enjoy. In terms of the situational factors, the proposed moderating role of future employability and family commitments in the Byabashaija and Katono (2011) study was not confirmed among College students in Uganda.

Previous research has examined the interaction effects between perceived desirability and perceived feasibility in determining entrepreneurial intentions based on the conjectural claims of regulatory focus theory (Higgins, 1987). The theory highlights how individuals regulate their behaviour by adopting a promotion focus (explore the positive outcomes of the behaviour) or a prevention focus (avoid negative outcomes of the behaviour) (Higgins, 1998). Positive interaction effects between perceived desirability and perceived feasibility are expected for promotion focused individuals, while negative effects are expected for prevention focused individuals (Shah and Higgins, 1997). By adopting the first perspective, Dutta *et al.* (2013) provided evidence that in an uncertain business environment of emerging industries, virtual venturing individuals' desires and abilities to create a new virtual venture interact in a way that entrepreneurial intentions are stronger when perceived desirability and feasibility are both present and positive. On the other hand, Fitzsimmons and Douglas (2011) explored the interaction term on a combined sample of MBA students from different university settings (Australia, China, India and Thailand) and found that entrepreneurial intentions are high not only for those students who have simultaneously high/high but also for those with high/low and low/high combinations of perceived desirability and feasibility. In contrast, Solesvik *et al.* (2012) did not find any evidence regarding the negative interaction effect (desirability x feasibility) on the formations of economics and business administration undergraduate students' entrepreneurial intentions in Ukraine. Tumasjan *et al.* (2013) in their experimental study explored the moderating role of students' and entrepreneurs' perceptions of the timing distance between the exploration and exploitation event of entrepreneurial opportunities based on the Construal level theoretical framework (Trope & Liberman, 2010). Their findings indicate that the relationship between the combinations of high desirability/low feasibility opportunity is stronger in the distant future whereas students and entrepreneurs with low desirability/high feasibility levels form stronger opportunity exploitation intentions in

the near future. Moreover, they provided evidence regarding the mediating role of opportunity evaluation in the relationship between the interaction effect of opportunity desirability/feasibility and temporal distance on students' and entrepreneurs' intentions to exploit opportunities.

**Table 2.5 Main findings regarding the applicability of the Entrepreneurial Event Model (EEM)**

Year	Authors	PD-EI	PF-EI	PrAct-EI	Sample	Residence	COLL/IND	Nationality
1993	Krueger, 1993b	S	S	S	University students	n.i.	n.i.	n.i.
2000	Krueger <i>et al.</i> , 2000	S	S	S	University students (Business major)	USA	IND	n.i.
2005	Drennan <i>et al.</i> , 2005	S	S	-	University students (Diverse majors)	n.i.	n.i.	n.i.
2005	Segal <i>et al.</i> , 2005	S	S	-	University students	USA	IND	n.i.
2007	Liñán and Santos, 2007	S	S	-	University students (Business major)	n.i.	n.i.	n.i.
2008	Guerrero <i>et al.</i> , 2008	S	S	-	University students (Entrepreneurship, Non-entrepreneurship and Engineering major)	Spain	COLL	n.i.
2008	Zampetakis, 2008	S	-	-	University students (Diverse majors)	Greece	COLL	Greece
2009	Iakovleva and Kolvereid, 2009	S	S	-	University students Business major	Russia	COLL	Russia
2010	Devonish <i>et al.</i> , 2010	S	S	-	University students	Caribbean (Barbados)	COLL	Caribbean (Barbados)
2011	Byabashaija and Katono, 2011	S	S	-	University students	Uganda	COLL	Uganda
2011	Chuluunbaatar <i>et al.</i> , 2011	S	NS	-	Entrepreneurs (business has operated less than 10 years)	China and Mongolia	COLL	China and Mongolia

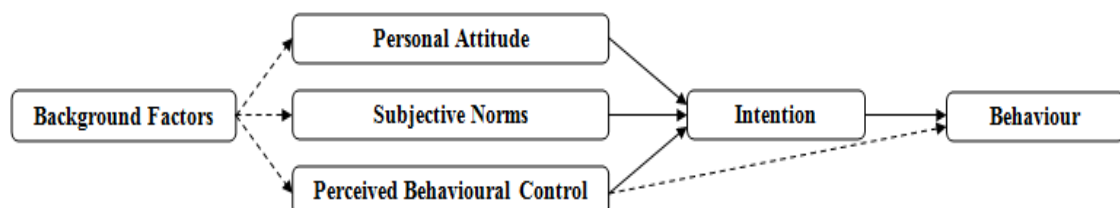
Year	Authors	PD-EI	PF-EI	PrAct-EI	Sample	Residence	COLL/IND	Nationality
2011	Fitzsimmons and Douglas, 2011	S	S	-	University students (Business major and entrepreneurial courses)	Australia, China, India and Thailand	IND-COLL	n.i.
2011	Lanero <i>et al.</i> , 2011	NS	S	-	University students	Spain	COLL	n.i.
2012	de Clercq <i>et al.</i> , 2012	S	S	-	University students (Diverse majors)	n.i.	n.i.	n.i.
2012	Solesvik <i>et al.</i> , 2012	S	S	-	University students (Business major)	Ukraine	COLL	Ukraine
2013	Roxas, 2013	S	S	-	University students (Business major)	Philippines	COLL	Philippines
2013	Tumasjan <i>et al.</i> , 2013	S	S	-	University students (Business and engineering major) Entrepreneurs	Germany	IND	n.i.
2013	Wurthmann, 2013	S	S	-	University students (Business major)	USA	IND	n.i.
2013	Dutta <i>et al.</i> , 2013	S	S	-	University students (Diverse majors)	USA	IND	n.i.
2013	Volery <i>et al.</i> , 2013	S	S	-	Secondary students	Sweden	IND	Sweden
2013	Zhang <i>et al.</i> , 2013	S	NS	-	University students (Engineering major)	China	COLL	n.i.

*Note.* PD = Perceived Desirability, PF = Perceived Feasibility, PrAct = Propensity to Act, EI = Entrepreneurial Intention, S = Significant relationship with entrepreneurial intentions, NS = Non-significant relationship with entrepreneurial intentions, - indicates that the variable was not included in the analysis, n.i. = not indicated in the study, IND = Individualistic culture based on country of residence, COLL = Collectivistic culture based on country of residence

### 2.3.5 Theory of Planned Behaviour

The Theory of Planned Behaviour (TPB) (Ajzen, 1991), an extension of the Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975), explains human behaviour by positing that the formation of intentions towards a given behaviour that leads to the actual performance of the behaviour is determined by an individual's personal attitude, subjective norms and perceived behavioural control (Figure 5). Personal attitude refers to the individual's evaluation of the given behaviour and reflects favourable or unfavourable perceptions (Ajzen, 1991; Ajzen, 2001). Individuals' positive or negative perceptions are expressed in the form of instrumental components related to cognitive perceptions (e.g. the degree to which a specific behaviour is beneficial) and affective components related to emotional perceptions (e.g. the degree to which a specific behaviour is enjoyable) (Rhodes and Courneya, 2003a). Subjective norms consist of individuals' beliefs regarding what their close social ties think and do in accordance to the given behaviour (Ajzen, 1991). Subjective norms refer to the perceived social influence of engaging in a given behaviour by reflecting both injunctive components related to individuals' beliefs about how their close social circles think about their decision to engage in a given behaviour and descriptive components related to individuals' beliefs about whether their close social circles have performed or intend to perform the given behaviour (Rhodes and Courneya, 2003a). Perceived behavioural control describes the individual's perceived ease or difficulty of performing a given behaviour (Ajzen, 1991). The main assumption of the TPB is that the more positive an individual's personal attitude, the more favourable the subjective norms, and the greater one's perceived behavioural control, the stronger one's intention to engage in a given behaviour and consequently the greater the possibility of performing the given behaviour in a short or long time frame (Ajzen, 1991).

**Figure 2.5 Theory of Planned Behaviour (Ajzen, 1991; Ajzen and Fishbein, 2005)**



When the behaviour under consideration refers to entrepreneurial behaviours, personal attitude towards starting a business or participating in an existing one refers to individuals' positive or negative feelings about the perceived costs/benefits of being an entrepreneur and whether being an entrepreneur is related with enjoyable behaviours (Kolvereid, 1996b; Autio *et al.*, 2001; de Jong, 2013). Therefore, attitude should not be confused with generalised states of feeling with no specific target or cognitive structures with no feelings attached (Fini *et al.*, 2010). Subjective norms are internally-controlled by combining what an individual thinks about engaging in entrepreneurial activities in accordance with their close circle's (e.g. family, relatives, friends, business partners) expectations/opinions of whether the individual should become an entrepreneur or not, and in line with whether their close circle has been engaged in entrepreneurial activities in the past or decides to act entrepreneurially at the time that the individual's decision needs to be made (Liñán and Chen, 2009; Fini *et al.*, 2010). Individuals with high entrepreneurial self-efficacy and controllability feel confident about their skills, knowledge and ability to start, run and control a venture (Koellinger *et al.*, 2007), tend to see more opportunities than risks in certain situations, and feel capable of overcoming difficulties and handling situations by expecting positive outcomes (Kobia and Sikalieh, 2010). Perceived behavioural control towards entrepreneurial behaviour reflects individuals' beliefs about whether they are capable of successfully performing the roles and tasks related to entrepreneurial behaviours and whether entrepreneurial activities are within their personal control (Chen *et al.*, 1998b). Based on the main assumptions of the TPB, individuals considering that their engagement in entrepreneurial activities will be related to benefits not only in monetary terms but also in emotional states, that their social circles either acclaim entrepreneurial decisions by providing full support in general or by showing the path with their personal engagement in entrepreneurship, that they are capable of successfully performing entrepreneurship related activities and controlling the entrepreneurial environment, will form stronger entrepreneurial intentions and therefore will be more inclined towards taking action in relation to entrepreneurship related activities.

Mixed results regarding the application of the TPB in the entrepreneurial domain have been reported during the past decades (see Table 6). Scholars have focused on studying the relationship between personal attitude, subjective norms, perceived

behavioural control and entrepreneurial intentions in diverse sample groups. The vast majority of scholars have mainly employed student samples. The positive effects of the TPB core antecedents on entrepreneurial intentions have been verified in a combined sample of business and engineering students (Othman and Mansor, 2012) but the relationship between subjective norms and entrepreneurial intentions was found to be insignificant in a sample of engineering students (Krueger *et al.*, 2000). Using a sample of College students enrolled on an organisational behaviour course in a business school at a large university in the Midwest, Carey *et al.* (2010) examined students' intentions to create small ventures vs small ventures with high income vs high growth ventures. Their findings indicated that students' intentions to create small or high growth ventures are positively influenced only by their favourable subjective norms and their high levels of perceived behavioural control, while none of the TPB core antecedents were found to have an effect on students' intentions to create small-high income ventures.

Previous research has utilised university student samples in different countries. Iakovleva *et al.* (2011) provided evidence regarding the applicability of the TPB both in developing countries (Brazil, Mexico, Romania, Russia and Ukraine) and developed countries (Australia, Canada, The Czech Republic, France, Germany, Norway, Spain and The Netherlands). They found that personal attitude, subjective norms and perceived behavioural control explain 59 per cent of the variance in intention in developed countries and 62 per cent in developing countries. Moreover, they provide evidence regarding the stronger formation of positive attitudes, favourable subjective norms, perceived behavioural control and entrepreneurial intentions among students in developing countries in contrast to developed ones. In the Ukrainian context, Solesvik *et al.* (2012) in their study on business students did not find confirmation of the subjective norms-intentions relationship but one year later they confirmed that all TPB core antecedents simultaneously determine entrepreneurial intentions in a combined sample of business and engineering students (Solesvik, 2013b). Scholars have also used university student samples in Russia (Tkachev and Kolvereid, 1999; Engle *et al.*, 2010), Norway (Kolvereid, 1996b), The Netherlands (van Gelderen *et al.*, 2008; Moriano *et al.*, 2012) South Africa (Gird and Bagraim, 2008) and Spain (Díaz-García and Jiménez-Moreno, 2010; Liñán *et al.*, 2011c) and found that students' entrepreneurial intentions were positively influenced by their positive perceptions regarding entrepreneurship,



their beliefs that significant others favour their engagement in entrepreneurial activities and their confidence in their entrepreneurship related skills and their ability to control entrepreneurial behaviours. In Spain, Liñán (2008) and Liñán *et al.* (2013) excluded the subjective norms-intention relationship from their model, providing evidence only for the relationship between personal attitude/perceived behavioural control and entrepreneurial intentions while other scholars contrasted the significant findings regarding the main TPB tenets. From one perspective, Engle *et al.* (2010) confirmed the subjective norms/perceived behavioural control-intention relationship but revealed that the attempt to link students' positive attitudes towards entrepreneurship with entrepreneurial intentions was unsuccessful. From another perspective, scholars (Liñán and Chen, 2009; Moriano *et al.*, 2012) have confirmed the link of positive attitudes and perceived behavioural control with entrepreneurial intentions but have not found confirmation of the favourable subjective norms-high entrepreneurial intention relationship. This is also in line with Liñán *et al.*'s (2011c) work that tested the TPB application in two different regions in Spain and examined the role of students' regional variations. Despite the fact that the subjective norm-intention relationship was found to be significant in the combined sample, they provide evidence that social perceptions do not exert a positive influence on entrepreneurial intentions when the TPB is tested in Catalonia and Andalusia separately. Mueller (2001) provided evidence regarding the main TPB determinants of entrepreneurial intentions in a combined sample of students who participated in entrepreneurial courses in different universities in Austria, Liechtenstein, Switzerland and Germany. When the proposed TPB relationships were examined in a sample of students studying in German Universities, scholars confirmed the positive influence of students' high levels of perceived behavioural control on entrepreneurial intentions (Engle *et al.*, 2010; Moriano *et al.*, 2012). Engle *et al.* (2010) found that students' higher levels of entrepreneurial intentions are determined by their favourable subjective norms and not their positive attitude towards entrepreneurship. The opposite applies in the work of Moriano *et al.* (2012), who confirmed the positive attitude-intention relationship but found the subjective norms-intention relationship to be insignificant. Contradictory results regarding the proposed TPB relationships have been reported in the UK and France. Souitaris *et al.* (2007) verified the positive relationships between personal attitude / subjective norms / perceived behavioural

control and entrepreneurial intentions by using a combined sample of engineering students in an English and French University. Previous research on university students only in the UK provides evidence regarding the insignificant influence of students' beliefs regarding what others think about their decision to act entrepreneurially, in other words the positive influence of subjective norms on the formation of entrepreneurial intentions (Autio *et al.*, 2001). In France, Boissin *et al.* (2009) found confirmation only for the positive relationship between business students' positive attitude towards entrepreneurship and entrepreneurial intentions. Engle *et al.* (2010) found that only subjective norms and perceived behavioural control influence business students' entrepreneurial intentions. Scholars have argued that university students of diverse majors in India (Moriano *et al.*, 2012) and business majors in Bulgaria (Yordanova and Tarrazon, 2010), who have a positive attitude towards entrepreneurship, favourable subjective norms and high levels of perceived behavioural control, have acquired higher levels of entrepreneurial intentions. In other countries, the relationships between personal attitude and entrepreneurial intention (Bangladesh, Egypt and Costa Rica), subjective norms and entrepreneurial intention (Iran, Taiwan and Poland) and, finally, perceived behavioural control and entrepreneurial intention (Costa Rica and Ghana) were not verified (Liñán and Chen, 2009; Engle *et al.*, 2010; Moriano *et al.*, 2012). In the Chinese context, Wu and Wu (2008) discovered that students on diverse majors who consider entrepreneurship as a favourable occupational option, who believe that their close social ties support their decision to engage in entrepreneurial activities and feel capable of engaging in entrepreneurial activities that are under their personal control are more inclined towards forming entrepreneurial intentions. In contrast, Siu and Lo's (2013) study among MBA students and Engle *et al.*'s (2010) work regarding business students did not confirm the attitude-intention relationship and perceived behavioural control-relationship respectively. In Finland, scholars confirmed the positive relationship of students' personal attitude and perceived behavioural control with their entrepreneurial intentions (Autio *et al.*, 2001; Engle *et al.*, 2010). Findings regarding the link between subjective norms and students' entrepreneurial intentions indicate that the relationship was significant in a business student sample (Engle *et al.*, 2010) in contrast to the insignificant relationship in Autio *et al.*'s (2001) research. Previous research in Sweden showed that positive perceptions regarding entrepreneurship lead to higher

entrepreneurial intentions. However, this is not the case regarding the influence of subjective norms and perceived behavioural control. In this regard, Autio *et al.* (2001) found that entrepreneurial intentions are positively influenced by students' high levels of perceived behavioural control and not by their favourable subjective norms, while Engle *et al.* (2010) found evidence for the opposite. Findings in the USA showed that students' favourable perceptions regarding their engagement in entrepreneurial activities and confidence in their ability to perform and control entrepreneurial behaviours lead to high levels of entrepreneurial intentions but the relationship between subjective norms and entrepreneurial intentions was insignificant (Autio *et al.*, 2001; Boissin *et al.*, 2009). More recently, Engle *et al.* (2010) found that business students' positive attitude towards entrepreneurship and beliefs regarding what their close social circles think about their engagement in entrepreneurial activities influences the formation of entrepreneurial intentions. They also contradict previous findings by providing evidence regarding the insignificant role of perceived behavioural control on students' entrepreneurial intentions. Finally, scholars have confirmed the positive influence of personal attitudes and the insignificant role of subjective norms on secondary students' entrepreneurial intentions but found mixed results regarding the perceived behavioural control-intention relationship (do Paço *et al.*, 2011; Ferreira *et al.*, 2012). Specifically, do Paço *et al.* (2011) claim a positive link between perceived behavioural control and entrepreneurial intentions, while Ferreira *et al.* (2012) challenge these findings.

The determinants of entrepreneurial intentions as proposed by the TPB have also been explored in groups of individuals that go beyond the convenient sample group of students. In this regard, previous research has verified the TPB proposed relationships among 18-64 years old Finnish individuals (Kibler, 2013) but also among third-age (45-64) individuals living in Finland (Kautonen *et al.*, 2011). In the same geographical region, scholars provided evidence regarding the TPB proposed relationships by using a sample of prime-age and third-age non-entrepreneurs (Kautonen *et al.*, 2010; Kautonen *et al.*, 2013). In the USA, Carr and Sequeira (2007) confirmed the link between personal attitude/subjective norms/perceived behavioural control and entrepreneurial intentions among individuals who participated in ethnic, technology, and small business networking organisations and business start-up seminars. The main TPB findings have been replicated in the work of Guzmán-Alfonso and Guzmán-Cuevas (2012) based on

data from the Global Entrepreneurship Monitor Report referring to Latin America. In Germany, the main tenets of the TPB have been verified in a sample of academic and non-academic scientists from diverse scientific disciplines (Obschonka *et al.*, 2012). On the other hand, Goethner *et al.* (2012), in their study of academic entrepreneurship in Germany, only confirmed the positive influence of attitude and perceived behavioural control on scientists' intentions to create a venture in order to market their research knowledge. The insignificant relationship between subjective norms and entrepreneurial intentions was also verified in Sommer and Haug (2011) regarding German SMEs executives' intentions towards international entrepreneurship. Kolvereid and Isaksen (2006) in a sample of Norwegian business founders verified the positive attitude-intention and subjective norms-intention relationships but did not confirm the influence of perceived behavioural control on entrepreneurial intentions. Findings indicate that military officers in the Ukraine who have undertaken a business program form entrepreneurial intentions based on their positive attitudes, favourable subjective norms and perceived behavioural control (Vinogradov *et al.*, 2013). What is more interesting in Vinogradov *et al.*'s (2013) recent work is that the positive relationship between subjective norms and entrepreneurial intentions was moderated by the availability of satisfactory employment opportunities for military officers. In particular, their study provides evidence that the lower the supply of satisfactory employment opportunities, the stronger will be the positive relationship between subjective norms and entrepreneurial intentions.

Previous research has also explored the relationships among the three antecedents of entrepreneurial intentions and examined possible mediating effects in an attempt to better understand why the core TPB effects hold. In this regard, secondary students (do Paço *et al.*, 2011; Ferreira *et al.*, 2012) and university students in Finland, Sweden and USA (Autio *et al.*, 2001) who form positive perceptions regarding their engagement in entrepreneurial activities feel more confident regarding their entrepreneurial skills and their ability to control entrepreneurial behaviours. Autio *et al.* (2001) did not check for possible mediating effects but do Paco *et al.* (2011) found that personal attitude exerts an indirect effect on entrepreneurial intention through secondary students' high levels of perceived behavioural control. On the other hand, Ferreira *et al.* (2012) did not provide confirmation for the partial mediating effect. Research has also shown that the

relationship between subjective norms and secondary students' entrepreneurial intentions is fully mediated by their positive attitude and not their perceived behavioural control (do Paço *et al.*, 2011; Ferreira *et al.*, 2012). Moreover, do Paço *et al.* (2011) indicated that subjective norms influence entrepreneurial intentions only indirectly where favourable subjective norms lead to the formation of positive perceptions regarding entrepreneurship, which in turn increases secondary students' confidence and controllability and consequently influences entrepreneurial intentions. The role of personal attitude and perceived behavioural control as serial mediators in the subjective norms-intention relationship was not confirmed in Ferreira *et al.*'s (2012) study. Taking into account the positive effects of subjective norms on personal attitudes and perceived behavioural control among university students in Spain as indicated in Liñán's (2008) work and the exclusion of the norms-intention relationship in his structural model it could be hypothesised that the relationship is fully mediated by students' attitudes and perceived behavioural control simultaneously. Evidence of this full mediating effect comes in the light of more recent work on a combined sample of university students in Taiwan and Spain (Liñán and Chen, 2009). The mediating role of attitudes and perceived behavioural control on the subjective norm-intention relationship has also been verified in each sub-sample. Liñán *et al.* (2011) tested this mediating effect in a combined sample of students in two Spanish regions (Catalonia and Andalusia) and argued that subjective norms have both a direct and indirect effect on entrepreneurial intention. When each regional sub-sample was tested separately, subjective norms exert only an indirect effect on entrepreneurial intentions where attitudes and perceived behavioural control act as parallel mediators. On a cross-cultural level, Liñán *et al.* (2013) found that norms influence students' entrepreneurial intentions indirectly via personal attitudes and perceived behavioural control both in Spain and the UK. Particularly, the relationship between personal attitudes and entrepreneurial intentions is stronger in Spain, while the perceived behavioural control-intention relationship is stronger in the UK sample group (Liñán *et al.*, 2013).

Diverse results regarding the applicability of the TPB in different countries have raised concerns regarding the moderating role of individuals' cultural orientation in the proposed TPB relationships. Boissin *et al.* (2009) argue that personal attitudes towards entrepreneurship will exert a stronger effect on entrepreneurial intentions for university

students with an American rather than a French nationality. Despite the fact that personal attitudes interact with students' nationality in their study, they did not provide further evidence regarding the possible moderating effect. In contrast, Siu and Lo (2013) acknowledge the diversity of the relationships among the TPB constructs from one regional context to another and extend Liñán and Chen's (2009) theorisation regarding the cultural contingency of the self-perceptual approach. They argue that the influence of personal attitude and perceived behavioural control on entrepreneurial intentions will be stronger when Chinese individuals have a stronger independent self-construal or a weaker interdependent self-construal. In contrast, the relationship between subjective norm and entrepreneurial intentions will be stronger when individuals have a weaker independent self-construal or a stronger interdependent self-construal. They found evidence only for the moderating role of individuals' interdependent self-construal on the subjective norms-intention relationship. Previous research has also provided evidence regarding specific aspects in a country that may determine the TPB relationships. Kibler (2013) found that among the Finnish population the personal attitude-intention, subjective norms-intention and perceived behavioural control-intention relationship will be stronger when the household income and income growth in the country is high, the public sector employability is low and the population density is low, respectively. In Spain, Diaz Garcia and Jimenez-Moreno (2010) examined the moderating role of gender and found that university students' favourable subjective norms' influence on entrepreneurial intentions is stronger for women. The moderating role of gender on the perceived behavioural control relationship has not been verified. In Germany, research on scientists' entrepreneurial intentions verified the moderating role of group identification only for the perceived behaviour control-intention relationship (Obschonka *et al.*, 2012). Specifically, findings show that perceived behavioural control is more important and pronounced in the formation of entrepreneurial intentions when scientists' group identification with their workplace peers is low. Finally, Sommer and Haug (2011) explored the role of international working experience and knowledge on German SME's executives' intentions to engage in international entrepreneurship. According to their findings the managing directors' personal perceptions regarding international entrepreneurship will positively influence their entrepreneurial intentions, especially when they acquire high

levels of experience and knowledge of globalisation and global market opportunities. They also provided evidence regarding the moderating role of specific experience on the perceived behavioural control-intention relationship in such a way that the relationship is stronger when individuals acquire high levels of entrepreneurship-related knowledge that can be directly applied to the new venture.

**Table 2.6 Main findings regarding the applicability of the Theory of Planned Behaviour (TPB)**

Year	Authors	PA-EI	SN-EI	PBC-EI	SN-PA	SN-PBC	Sample	Residence	COLL/IND	Nationality
1996	Kolveid, 1996b	S	S	S	-	-	University Students (Business major)	Norway	IND	n.i.
1999	Tkachev and Kolveid, 1999	S	S	S	-	-	University Students (Diverse majors)	Russia	COLL	Russia
2000	Krueger <i>et al.</i> , 2000	S	NS	S	-	-	University Students (business major)	USA	IND	n.i.
2001	Autio <i>et al.</i> , 2001	S	NS	S	S	S	University Students	Finland	IND	n.i.
2001	Autio <i>et al.</i> , 2001	S	NS	S	S	S	University Students	UK	IND	n.i.
2001	Autio <i>et al.</i> , 2001	S	NS	S	S	S	University Students	USA	IND	n.i.
2001	Autio <i>et al.</i> , 2001	S	NS	S	S	S	University Students	Sweden	IND	n.i.
2006	Kolveid and Isaksen, 2006	S	S	NS	-	-	Entrepreneurs	Norway	IND	Norway
2007	Carr and Sequeira, 2007	S	S	S	-	-	Individuals living in the USA	USA	IND	n.i.
2007	Souitaris <i>et al.</i> , 2007	S	S	S	-	-	University Students (Engineering major and entrepr./non-entrepr.courses)	UK and France	IND	n.i.
2008	Liñán, 2008	S	-	S	S	S	University Students	Spain	COLL	n.i.



Year	Authors	PA-EI	SN-EI	PBC-EI	SN-PA	SN-PBC	Sample	Residence	COLL/IND	Nationality
2008	van Gelderen <i>et al.</i> , 2008	S	S	S	-	-	University Students (Business major)	Netherlands	IND	n.i.
2008	Wu and Wu, 2008	S	S	S	-	-	University Students (Diverse majors)	China	COLL	China
2008	Gird and Bagraim, 2008	S	S	S	-	-	University Students	South Africa	IND	South Africa
2009	Boissin <i>et al.</i> , 2009	S	NS	S	-	-	University Students	USA	IND	n.i.
2009	Boissin <i>et al.</i> , 2009	S	NS	NS	-	-	University Students	France	IND	n.i.
2009	Liñán and Chen, 2009	S	NS	S	S	S	University Students	Taiwan	COLL	n.i.
2009	Liñán and Chen, 2009	S	NS	S	S	S	University Students	Spain	COLL	n.i.
2010	Carey <i>et al.</i> , 2010	NS NS NS	S NS S	S NS S	-	-	University Students (sv, sv high income, high growth venture)	n.i.	n.i.	n.i.
2010	Díaz-García and Jiménez-Moreno, 2010	S	S	S	-	-	University Students (Business major)	Spain	COLL	n.i.
2010	Engle <i>et al.</i> , 2010	S	S	S	-	-	University Students (Business major)	Finland	IND	n.i.
2010	Engle <i>et al.</i> , 2010	S	S	S	-	-	University Students (Business major)	Russia	COLL	n.i.
2010	Engle <i>et al.</i> , 2010	S	S	NS	-	-	University Students (Business major)	USA	IND	n.i.
2010	Engle <i>et al.</i> , 2010	S	S	NS	-	-	University Students (Business major)	Sweden	IND	n.i.

Year	Authors	PA-EI	SN-EI	PBC-EI	SN-PA	SN-PBC	Sample	Residence	COLL/IND	Nationality
2010	Engle <i>et al.</i> , 2010	NS	S	S	-	-	University Students (Business major)	Germany	IND	n.i.
2010	Engle <i>et al.</i> , 2010	NS	S	S	-	-	University Students (Business major)	France	IND	n.i.
2010	Engle <i>et al.</i> , 2010	NS	S	S	-	-	University Students (Business major)	Bangladesh	COLL	n.i.
2010	Engle <i>et al.</i> , 2010	NS	S	S	-	-	University Students (Business major)	Egypt	COLL	n.i.
2010	Engle <i>et al.</i> , 2010	NS	S	NS	-	-	University Students (Business major)	Costa Rica	COLL	n.i.
2010	Engle <i>et al.</i> , 2010	S	S	NS	-	-	University Students (Business major)	Ghana	COLL	n.i.
2010	Engle <i>et al.</i> , 2010	NS	S	S	-	-	University Students (Business major)	Spain	COLL	n.i.
2010	Engle <i>et al.</i> , 2010	S	S	NS	-	-	University Students (Business major)	China	COLL	n.i.
2010	Fini <i>et al.</i> , 2010	S	NS	S	-	-	Entrepreneurs	Italy	IND	n.i.
2010	Kautonen <i>et al.</i> , 2010	S	S	S	-	-	Non-entrepreneurs (Prime age 20-49 and Third age 50-64)	Finland	IND	n.i.
2010	Yordanova and Tarrazon, 2010	S	S	S	-	-	University Students (Business major)	Bulgaria	COLL	n.i.
2011	do Paço <i>et al.</i> , 2011	S	NS	S	S	NS	Secondary students (14-15 years old)	n.i.	n.i.	n.i.
2011	Iakovleva <i>et al.</i> , 2011	S	S	S	-	-	University Students (Diverse majors)	Developing countries	COLL	n.i.

Year	Authors	PA-EI	SN-EI	PBC-EI	SN-PA	SN-PBC	Sample	Residence	COLL/IND	Nationality
2011	Iakovleva <i>et al.</i> , 2011	S	S	S	-	-	University Students (Diverse majors)	Developed countries	IND	n.i.
2011	Kautonen <i>et al.</i> , 2011	S	S	S	-	-	Individuals living in Finland (45-64 years old)	Finland	IND	n.i.
2011	Liñán <i>et al.</i> , 2011c	S	S	S	S	S	University Students (Diverse majors)	Spain (Andalusia and Spain)	COLL	n.i.
2011	Liñán <i>et al.</i> , 2011c	S	NS	S	S	S	University Students	Spain (Andalusia)	COLL	n.i.
2011	Liñán <i>et al.</i> , 2011c	S	NS	S	S	S	University Students	Spain (Catalonia)	COLL	n.i.
2011	Mueller, 2011	S	S	S	-	-	University Students (Diverse majors and entrepreneurial courses)	Germany, Austria, Liechtenstein and Switzerland	IND	n.i.
2011	Sommer and Haug, 2011	S	NS	S	-	-	Managing directors, executives in SME's	Germany	IND	n.i.
2012	Ferreira <i>et al.</i> , 2012	S	NS	NS	-	-	Secondary students (14-15 years old)	n.i.	n.i.	n.i.
2012	Goethner <i>et al.</i> , 2012	S	NS	S	-	-	Academic scientists	Germany	IND	n.i.
2012	Guzmán-Alfonso and Guzmán-Cuevas, 2012	S	S	S	-	-	GEM (2008-2010)	Latin America	COLL	n.i.
2012	Moriano <i>et al.</i> , 2012	S	S	S	-	-	University Students (Diverse majors)	Netherlands	IND	Netherlands
2012	Moriano <i>et al.</i> , 2012	S	S	S	-	-	University Students (Diverse majors)	India	COLL	India

Year	Authors	PA-EI	SN-EI	PBC-EI	SN-PA	SN-PBC	Sample	Residence	COLL/IND	Nationality
2012	Moriano <i>et al.</i> , 2012	S	NS	S	-	-	University Students	Poland	IND	Poland
2012	Moriano <i>et al.</i> , 2012	S	NS	S	-	-	University Students	Germany	IND	Germany
2012	Moriano <i>et al.</i> , 2012	S	NS	S	-	-	University Students	Iran	COLL	Iran
2012	Moriano <i>et al.</i> , 2012	S	NS	S	-	-	University Students	Spain	COLL	Spain
2012	Obschonka <i>et al.</i> , 2012	S	S	S	-	-	University Students	Germany	IND	n.i.
2012	Othman and Mansor, 2012	S	S	S	-	-	University Students (Business/Engineering major)	Malaysia	COLL	n.i.
2012	Solesvik <i>et al.</i> , 2012	S	NS	S	-	-	University Students (Business major)	Ukraine	COLL	n.i.
2013	Liñán <i>et al.</i> , 2013	S	-	S	S	S	University Students	UK	IND	n.i.
2013	Liñán <i>et al.</i> , 2013	S	-	S	S	S	University Students	Spain	COLL	n.i.
2013	Nabi and Liñán, 2013	S	-	S	-	-	University Students Business major	UK and Spain	IND-COLL	n.i.
2013	Siu and Lo, 2013	NS	S	S	-	-	University Students	China -Hong Kong	COLL	China -Hong Kong
2013	Solesvik, 2013a	S	S	S	-	-	University Students (Business/Engineering major)	Ukraine	COLL	Ukraine

Year	Authors	PA-EI	SN-EI	PBC-EI	SN-PA	SN-PBC	Sample	Residence	COLL/IND	Nationality
2013	Kautonen <i>et al.</i> , 2013	S	S	S	-	-	Non-entrepreneurs (working age population 18–64 years old)	Finland	IND	n.i.
2013	Kibler, 2013	S	S	S	-	-	Individuals living in Finland (18-64 years old)	Finland	IND	n.i.
2013	Vinogradov <i>et al.</i> , 2013	S	S	S	-	-	Military officers in business program	Ukraine	COLL	Ukraine

*Note.* PA = Personal Attitude, SN = Subjective Norms, PBC = Perceived Behavioural Control, EI = Entrepreneurial Intention, EB = Entrepreneurial Behaviour, S = Significant relationship with entrepreneurial intentions, NS = Non-significant relationship with entrepreneurial intentions, - indicates that the variable was not included in the analysis, n.i. = not indicated in the study, IND = Individualistic culture based on country of residence, COLL = Collectivistic culture based on country of residence

## 2.4 Venture growth context

Growth-oriented intentions represent intentions to act upon behaviours that involve the transformation of existing firms through the renewal or reshaping of the key ideas on which they are built or behaviours that involve the birth of new businesses within an existing firm (Ireland *et al.*, 2009; Phan *et al.*, 2009). Considering that entrepreneurial intentions change over time and vary between the start-up and growth stages (Terpstra and Olson, 1993; Krueger, 2000) research has focused on identifying whether the influence of psychological variables may have a similar or different effect on entrepreneurial intentions at different stages of the entrepreneurial process (Dutta and Thornhill, 2008). Still, the existing literature is scarce with diverse findings regarding the psychological aspects that determine growth intentions after the launch of a new venture.

Scholars have examined the role of traits in relation to individuals' growth intentions. In a study of private enterprises in China, Lau and Busenitz (2001) found that owners' need for achievement leads to higher levels of growth intentions in terms of expanding the existing venture. Yordanova (2011) showed that owners of Bulgarian private enterprises form growth intentions which depend on their level of risk aversion, in such a way that less risk-averse owners acquire higher levels of growth-oriented intentionality. Going a step further, Fini *et al.* (2010) showed that the personal attitude mediated the positive relationship between risk taking propensity and growth-oriented intentionality. More recently Douglas (2013) has challenged the aforementioned findings by suggesting that tolerance for risk and growth-oriented intentions are not significantly related to each other when these are examined among MBA candidates taking the 'Entrepreneurship and Business Plan' course in Thailand.

When it comes to the motivational aspects that determine growth intentions, research shows that individuals intend to follow growth oriented strategies because they want to feel enjoyment and challenge again through the entrepreneurial process (Yordanova, 2011; Douglas, 2013). As the first stage of the entrepreneurial process that relates to venture creation has been successfully accomplished individuals try to fulfil these desires by gradually upgrading into the next entrepreneurial stage, which involves venture growth. Based on the same logic, scholars have also examined the influence of motivation related to gaining financial success on growth intentions and found that

individuals' reasons for having the intention to engage in growth behaviours concern their desire to gain monetary rewards (Lau and Busenitz, 2001; Yordanova, 2011). However, Douglas (2013) in a more recent study on a student sample found that the relationship between financial success and growth intentions but also the autonomy-growth intention relationship is non-significant. The effects of Carter *et al.*'s (2003) motivational dimensions on growth intentions (see Table 7) has also been determined based on data from the Panel Study of Entrepreneurial Dynamics (PSED). Despite the fact that general findings indicate that all six motivational dimensions have a significant and positive relationship with the intention to grow a venture (Cassar, 2007; Edelman *et al.*, 2010; Manolova *et al.*, 2011; Davis and Shaver, 2012) divergent results still exist. For instance, Cassar (2007) found that the relationship between individuals' desire for independence and recognition is significantly but negatively related to their intent to grow a venture in terms of total sales and human resources. Edelman *et al.* (2010) and Manolova *et al.* (2011) suggest that growth intentions are formed irrespective of individuals' motives of independence, recognition and role models.

**Table 2.7 PSED: The influence of Carter's motivational dimensions on growth intentions**

PSED studies	Carter's motivational dimensions					
	Financial success	Independence	Innovation	Recognition	Self-realisation	Role models
Cassar, 2007	S	S (-)	NS	S (-)	NS	NS
Edelman <i>et al.</i> , 2010	S	NS	S	NS	S	NS
Manolova <i>et al.</i> , 2011	S	NS	S	NS	NS	NS
Davis and Shaver, 2012	S	S	S	S	S	S

*Note.* S = Significant relationship with growth intentions, NS = Non-significant relationship with growth intentions, (-) indicates a negative relationship

Research shows that entrepreneurial self-efficacy is positively related to growth-oriented intentions (Fini *et al.*, 2010; Douglas, 2013) while the relationship is partially mediated by the role of personal attitude in such a way that individuals that feel capable

and confident regarding their engagement in growth-oriented activities will form positive perceptions regarding the outcomes that can be gained through their engagement in growth-oriented activities, and consequently will form stronger growth-oriented intentions (Fini *et al.*, 2010). In order to determine growth-oriented intentions scholars have also focused on the applicability of the TPB (Ajzen, 1991) in the venture growth context. In this regard, Fini *et al.* (2010) in their study of new technology-based firm (NTBF) owners in Italy found that the stronger the attitude and perceived behavioural control, the greater entrepreneurs' intentions towards corporate entrepreneurship. This was not the case regarding the role of subjective norms as entrepreneurs' beliefs regarding what their social ties think about their engagement in corporate entrepreneurship had no effect on the formation of corporate entrepreneurial intentions (Fini *et al.*, 2010). Based on previous propositions indicating that interaction effects among the TPB (Ajzen, 1991) constructs merit investigation (Krueger, 2003), de Jong (2013) went beyond the applicability of Ajzen's theory and examined a three-way moderation effect among personal attitude, subjective norms and perceived behavioural control in determining the decision to exploit opportunities for innovation. By using a sample of high-tech small-business owners, findings initially confirmed the positive effect of subjective norms and perceived behavioural control on innovation exploitation intentions in already established ventures (de Jong, 2013). The crucial finding in their study was that personal attitude was significantly related to innovation exploitation intentions only when respondents perceive both favourable subjective norms and high levels of perceived behavioural control (de Jong, 2013). According to the author "*this multiplicative effect suggests that the planned behaviour constructs can be thought of as necessary conditions beneath which business owners are much less likely to exploit identified opportunities*" (de Jong, 2013, p. 1).

## **2.5 Critique and future directions**

This study shows that personality theory, motivation theory, self-efficacy theory, Entrepreneurial Event Model and Theory of Planned behaviour are the most researched theories/models when it comes to the psychological determinants of entrepreneurial intentions. Despite the fact that previous research exists, there is a great deal of more



detailed and less parsimonious investigation regarding the implementation and integration of the identified theories/models in the entrepreneurial domain.

Personality theory points to five broad (conscientiousness, openness, emotional stability, extraversion and agreeableness) and ten specific (need for achievement, risk taking propensity, locus of control, Tolerance of ambiguity, Innovative Orientation, Need for independence, Opportunity perception, Proactive personality, Creative personality and Narcissistic personality) psychological factors that relate to individuals' personality traits. Previous research has yielded contradictory results regarding both categories of personality traits and raises concerns regarding their influence on entrepreneurial intentions. Simply adding new personality traits to the already existing long list will make a small contribution to the understanding of the formation of entrepreneurial intentions. Based on the fact that individuals' personality is considered more as a combination of characteristics rather than single traits, future research could examine the simultaneous role of the identified entrepreneurial traits on entrepreneurial intentions by grouping them into broader categories. Moreover, Frank *et al.* (2007) have argued that the conjunction of other additional influencing factors is compulsory if future research wants to determine a meaningful assessment of the value of personality traits in the entrepreneurial process. Considering that the so called "entrepreneurial traits" can also be found at lower levels among managers and business directors, it is essential to examine when they have an influence on entrepreneurial intentions. This may suggest that individuals with specific entrepreneurial characteristics may choose to enter entrepreneurship only when certain conditions hold (Brandstätter, 2011). This is also indicated in Bird's (1988) conceptual model, where personal factors interact with social-political and economic circumstances in determining entrepreneurial intentions. Bird's (1988) Entrepreneurial Intentionality model has to be validated empirically. For instance, future research is needed in order to determine interaction effects between personality and situation factors (Rauch and Frese, 2007a). For instance, a possible moderator could relate to environmental conditions such as the recent economic recession, which may affect the psychological process by which specific personality traits influence the formation of entrepreneurial intentions (Herron and Robinson, 1993).

A quite similar approach was identified regarding the role of motivation (Financial success, independence, Innovation, Recognition, Self-realisation, Role models, Authority, Work life balance, Creativity, Current situation on market, Social value, Fun/Enjoyment in the entrepreneurial) on entrepreneurial intentions. Previous research has produced divergent results indicating the reasons why individuals form entrepreneurial intentions. However, when it comes to the positive influence of independence/autonomy, authority and the current situation in the labour market/professional displacement, findings are analogous among the studies on the formation of entrepreneurial intentions. Based on the same logic regarding entrepreneurial traits there is an urgent demand in terms of grouping the diverse motives into more psychologically determined categories. In this regard, future research could adapt Ryan and Deci's (2000a) and Deci and Ryan's (2008) conceptualisation of autonomous and controlling motivation according to their level of self-determination. Individuals' motivation is measured based on the degree of autonomy, with motives/reasons for engaging in a given behaviour ranging along a continuum from controlling to autonomous motivation (Ryan and Deci, 2000b). Autonomous motivation describes individuals' true sense of their self, while controlling motivation concerns forces that are external to the self (Deci and Ryan, 1985; Deci and Ryan, 2002; Deci and Ryan, 2010). The already identified motives can be traced to one of the external and introjection regulations of controlling motivation or one of the identification and intrinsic regulations of autonomous motivation. This would give the opportunity to future research to examine the motivational constructs simultaneously without strictly measuring whether the motive is present or absent and will therefore provide a more complete and psychologically based view of the reasons why individuals initially form entrepreneurial intentions and consequently decide to engage in entrepreneurial behaviours.

This review has examined the influence of entrepreneurial self-efficacy on entrepreneurial intentions and indicates common findings, with only two exceptions (Tumasjan *et al.*, 2013; Volery *et al.*, 2013) that have found the relationship insignificant. This may suggest that the role of entrepreneurial self-efficacy on the formation of entrepreneurial intentions is well-established but future research should go beyond the justification of the direct and positive relationship and examine more

extensively the reasons why and the conditions under which the relationship holds in the form of highlighting possible psychological mediating and moderating constructs. For instance, research could focus on the mediating role of individuals' self-regulation focus and the moderating role of resilience, as indicated in previous work (Bullough and Renko, 2013; Bullough *et al.*, 2013; Pihie and Bagheri, 2013).

More research is also needed regarding the applicability of Shapero and Sokol's (1982) Entrepreneurial Event Model. Despite the fact that the vast majority of research confirmed that entrepreneurial intentions are positively influenced by individuals' perceived desirability and feasibility, the model has still not been examined holistically as the third variable concerning individuals' propensity to act was excluded from the analyses. The exclusion of the propensity to act variable, which is interrelated with the rest of the constructs that determine entrepreneurial intentions as indicated in the EEM, is problematic in terms of determining the actual relationships between and among the study variables. From a methodological perspective, changes are expected when the constructs co-vary in determining intentions. Therefore, more research is needed in this direction in order to confirm that entrepreneurial intentions are simultaneously based on individuals' perceived desirability, propensity to act and perceived feasibility, as indicated in previous studies (Krueger, 1993b; Krueger *et al.*, 2000).

The most researched psychological constructs that determine entrepreneurial intentions are based on the main tenets of the Theory of Planned Behaviour. In total the vast majority of scholars have confirmed the positive influence of individuals' personal attitude, subjective norms and perceived behavioural control on the formation of entrepreneurial intentions and provided evidence regarding the applicability and ecological validity of the TPB. Still, research has also produced contrary findings. The reasons why previous research has failed to link personal attitudes to the formation of entrepreneurial intentions has not been extensively examined. Personal attitudes, subjective norms and perceptions of control, although conceptually independent, could correlate with each other because they may be based in part on the same information (Ajzen and Fishbein, 2005). To my knowledge there is only limited research (Autio *et al.*, 2001; do Paço *et al.*, 2011) indicating the indirect link between personal attitudes and entrepreneurial intentions via perceived behavioural control. Another possible examination and a new wave of research could focus on the role of past behaviour,

which may attenuate the effects of attitude and intentions (Hagger *et al.*, 2002b; Sommer, 2011). The insignificant direct relationship between subjective norms and entrepreneurial intentions has been explained by the indirect effects of subjective norms on intention via personal attitudes and perceived behavioural control. Still, previous research (Autio *et al.*, 2001; Liñán, 2008; Liñán and Chen, 2009; do Paço *et al.*, 2011; Liñán *et al.*, 2011c; Liñán *et al.*, 2013) has examined the effects only empirically without incorporating a solid theoretical background. Future research is vital in re-examining the proposed mediating effects based on theories like the Social Capital theory (Coleman, 1990) and the Social Cognitive theory (Bandura, 1986; Bandura, 1997), which explain why individuals' favourable subjective norms exert an influence on their perceptions regarding entrepreneurship and their confidence in undertaking entrepreneurial action. The unsuccessful attempts to link perceived behavioural control to entrepreneurial intentions raise questions about whether the influence of individuals' personal evaluations regarding their capability and controllability towards engaging in entrepreneurial activities may directly influence behaviour independently of the intention mediating effect, as indicated in Ajzen and Madden's (1986) previous work. However, it is possible that individuals' perceptions of the extent to which they have control over the entrepreneurial behaviour may be "*inaccurate, biased or irrational*" (Ajzen and Fishbein, 2005). In order to determine whether perceived behavioural control is veridical and influences entrepreneurial intentions and actions, research needs to incorporate the inclusion of actual control and verify that control beliefs can serve as a proxy for actual control (Ajzen and Fishbein, 2005). These propositions merit investigation.

Krueger (2003) argues that interaction effects between and among the three distinct, but interrelated factors of personal attitude, subjective norms and perceived behavioural control may exist. The interactions effects in the TPB have only been examined in de Jong's (2013) previous work. Moreover, the author's call for further research in this direction but in diverse entrepreneurship-related contexts implies that the determination of possible interaction effects is crucial for the better understanding of entrepreneurial intentions. In this regard, future research could examine a) the interaction effect of personal attitudes and subjective norms, as postulated in the contingent-consistency approach (Acock and DeFleur, 1972; Liska, 1974; Andrews and Kandel, 1979), b) the

possibility that perceived behavioural control may interact with subjective norms (Ajzen, 2002; Fishbein and Ajzen, 2010) and c) the interaction effect between personal attitudes and perceived behavioural control based on Eagly and Chaiken's (1993) argumentation in predicting entrepreneurial intentions. According to the TPB, intentions are based on attitudes in tandem with subjective norms and perceived behavioural control and those intentions appear to be stronger when high levels of control, favourable norms and positive attitudes toward the behaviour co-exist (Ajzen, 1991; Ajzen and Fishbein, 2005; Prislin and Wood, 2005). This may suggest that research should go beyond the two-way interaction effects in the TPB as indicated in the aforementioned propositions and examine a possible three-way interaction effect among personal attitude, subjective norms and perceived behavioural control. When moving from one behaviour to another or from one population to another, one of the TPB constructs may not exert an influence on the formation of entrepreneurial intentions (Ajzen and Fishbein, 2005). The examination of a three-way interaction effect, whether entrepreneurial intentions are strong even in the absence of one of the more proximal antecedents in the TPB, will indicate a possible substitution argument where the absence of one antecedent is substituted by the stronger effect of another construct.

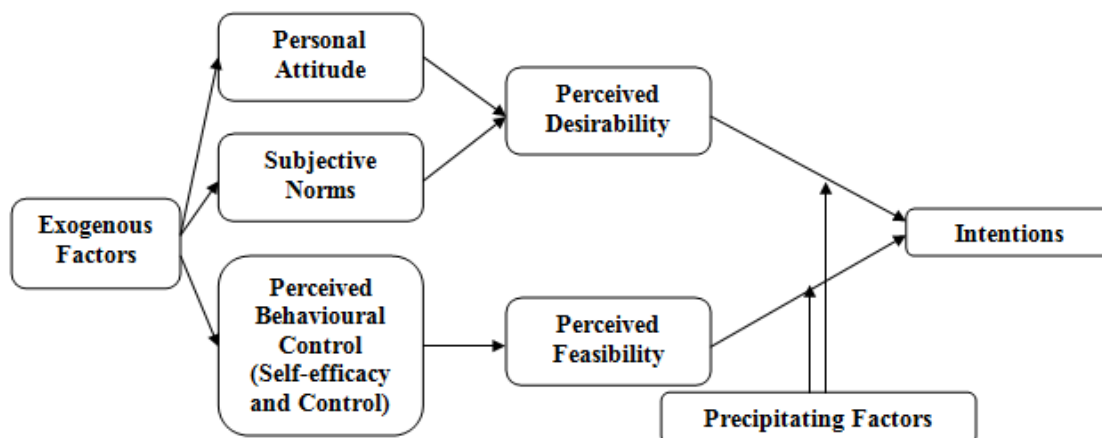
### ***2.5.1 Integrated conceptual models***

In line with Shook *et al.*'s (2003) recommendation to integrate and reduce the number of alternative intention models, several years later this study reaches the same conclusion and proposes diverse ways in which psychological theories can be effectively combined and enriched with non-psychological constructs in predicting entrepreneurial intentions. The first proposition comes in the light of integrating motivational constructs and personality traits into a unified model. A successful personality examination takes into account not just trait components but also mediation entrepreneurial processes (Mischel and Shoda, 1998). Thereofre, examining the mediating role of motivation in the relationship between entrepreneurial characteristics and entrepreneurial intentions, as indicated in Herron and Robinson's (1993) work, has a special value. Secondly, the entrepreneurial self-efficacy and intention link is well-established while the self-efficacy theory can be embedded into the TPB. Perceived behavioural control is a quite similar concept to entrepreneurial self-efficacy (Bandura,

1977; Bandura *et al.*, 1980; Bandura, 1982) but is enriched with controllability components (Ajzen, 2002). Based on this differentiation, entrepreneurial self-efficacy reflects individuals' confidence to perform the behaviour, while controllability refers to individuals' ability to exert control over the target behaviour (Rhodes and Courneya, 2003b). In this regard future research that examines the TPB by using second order measurements for perceived behavioural control is needed.

Thirdly, an integrated conceptualisation that combines the main tenets of the Theory of Planned Behaviour (Ajzen, 1991) with Shapero and Sokol's (1982) Entrepreneurial Event model was proposed by Krueger and Brazeal (1994) and exemplified later in Krueger's (2000) work. According to the integrated model, intentions are driven by individuals' perceptions that venture creation is perceived as personally desirable, supported by social norms and feasible (Krueger and Brazeal, 1994; Krueger, 2000). As shown in Figure 6, the direct relationships in Ajzen's (1991) model that link personal attitude, subjective norms and perceived behavioural control are mediated by the role of perceived desirability and perceived feasibility (Krueger, 2000). The theoretical rationale for the proposed mediating effects is based on the argument that perceived desirability is influenced by personal attitudes and subjective norms while perceived feasibility is determined by perceived behavioural control, entailing both self-efficacy and controllability perceptions (Krueger and Brazeal, 1994).

**Figure 2.6 Integrated model (Krueger and Brazeal, 1994; Krueger, 2000)**



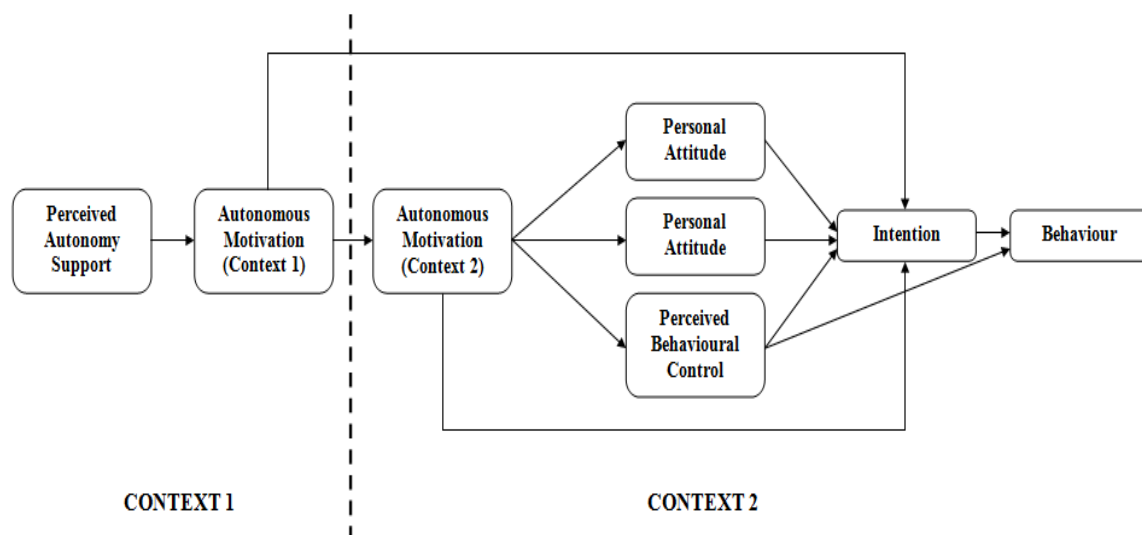
Based on the aforementioned theoretical lenses, scholars have focused on the direct way that psychological factors relate in the entrepreneurial intentionality model by

replacing personal attitudes with perceived desirability and perceived behavioural control by perceived feasibility in Ajzen's (1991) model. Studies have confirmed the simultaneous positive influence of perceived desirability and feasibility (Shook and Bratianu, 2010) but also personal attitude and perceived feasibility (Liñán, 2004; Liñán *et al.*, 2011a) on entrepreneurial intentions among university students in Romania and Spain respectively. Almobaireek and Manolova (2012) conclude that when perceived desirability, social norms and perceived behavioural control are simultaneously considered to influence students' entrepreneurial intentions in Saudi Arabia, the effect of individuals' capability and controllability is present, while the influence of desirability is strongly related to intentions only for men. The moderating role of gender on social norms and perceived behavioural control was found to be insignificant. Regarding the role of social norms, previous research has produced divergent results, indicating either a positive (Almobaireek and Manolova, 2012), negative (Shook and Bratianu, 2010) or non-significant relationship with the formation of venture creation intentions (Liñán, 2004; Liñán *et al.*, 2011a). The possible non-significant relationship between subjective norms and entrepreneurial intentions has been explained by scholars arguing about the mediating role of perceived desirability and feasibility (Iakovleva and Kolvereid, 2009; Byabashaija and Katono, 2011; Solesvik *et al.*, 2012). In particular, favourable subjective norms have an indirect relationship with entrepreneurial intentions in such a way that individuals who perceive that their social circle is positive towards their decision to engage in entrepreneurial activities will consider the entrepreneurial behaviour more desirable and feasible and will therefore acquire higher levels of entrepreneurial intentions. Iakovleva and Kolvereid (2009) and Solesvik *et al.* (2012) went a step further by proposing an interrelation between perceived desirability/feasibility and attitude/control. They proposed and provided evidence that personal attitudes only indirectly influence entrepreneurial intentions via perceived desirability while perceived behavioural control affects entrepreneurial intentions indirectly via perceived feasibility. Research on Krueger's proposed model is still limited and therefore future studies are vital in order to verify or falsify the existing findings.

The fourth proposition is related to the incorporation of the motivational theory in the Theory of Planned Behaviour and based on Herron and Sapienza's (1992) argument

that conceptual models that exclude psychological variables as motives fail to capture the entrepreneurial process holistically. Future research could consider motivation based on the aforementioned proposition regarding the Self Determination Theory (Ryan and Deci, 2000a; Deci and Ryan, 2008) and examine the direct and indirect link of autonomous/controlling motivation, as suggested in the top-down approach of Vallerand's (1997) hierarchical model of motivation. To my knowledge, such an integrated model that demonstrates the psychological paths by which entrepreneurial motivation, personal attitudes, subjective norms and perceived behavioural control co-exist in determining entrepreneurial intentions has not been examined in the entrepreneurial domain. Considering that in the entrepreneurial field familiar and common entrepreneurship-related contexts can be recognised, such as the entrepreneurial education context and the venture creation context or the entrepreneurial education context and the family business take over context, it is also rational to examine whether motivation in one context can be transferred to motivation in a familiar context and how these in turn affect the TPB antecedents, as indicated in the Trans-Contextual Model (TCM) (Hagger and Chatzisarantis, 2012). Therefore, future research that responds to Hagger and Chatzisaranti's (2012) call regarding the applicability of the TCM (see Figure 7) in diverse settings is crucial.

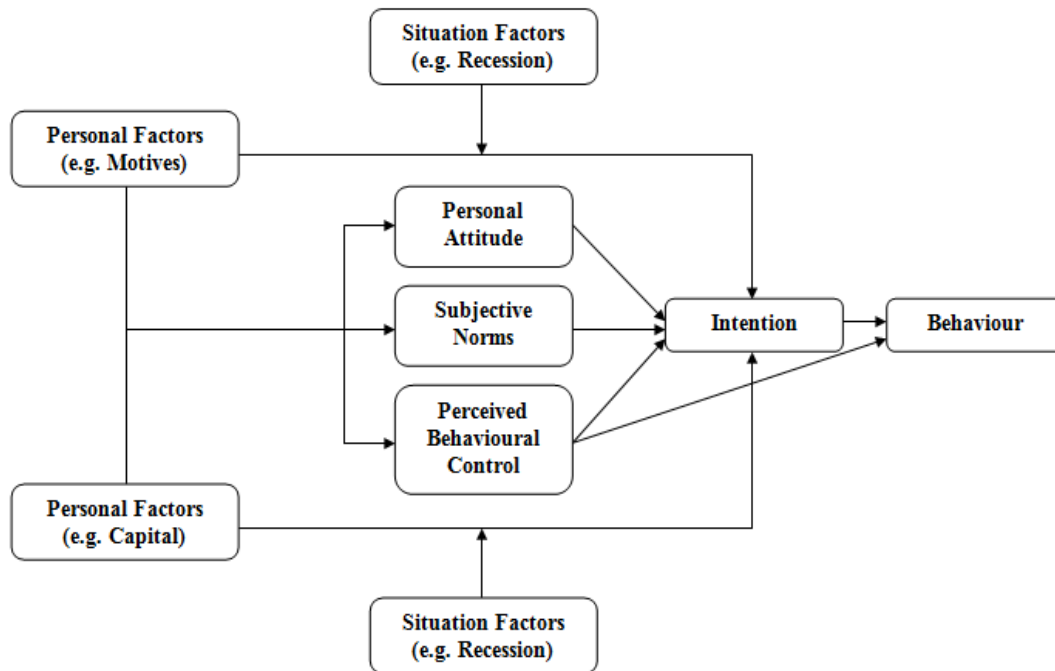
**Figure 2.7 Trans-Contextual Model (TCM; Hagger and Chatzisarantis, 2012)**





Going beyond the integrated models that combine diverse psychological constructs there is also an urgent need to extend these models by incorporating other non-psychological factors that may complement the understanding regarding a more general perspective of the formation of entrepreneurial intentions. The notion was firstly introduced by Bird (1988) and later extended by Boyd and Vozikis (1994), who modified the Entrepreneurial Intentionality model by including the role of personal attitude and entrepreneurial self-efficacy. According to their conceptualisation, personal and situational factors interact and influence intentions indirectly via personal attitude and self-efficacy. This is in line with Ajzen's (2005) proposition that individuals' behavioural, normative and control beliefs about the performance of a given behaviour are influenced by a wide variety of cultural, personal and situational factors (see Figure 6). Krueger (2000), as indicated in Figure 6, also incorporates the role of exogenous factors in terms of personal and situational factors in his model by arguing that these will influence or precipitate intentions (see Figure 7). In the first case, the relationship is indirect via personal attitude, subjective norms and perceived behavioural control, which in turn will exert an effect on individuals' perceived desirability and feasibility and will consequently lead to the formation of entrepreneurial intentions. In the second case, the relationship is direct due to the fact that precipitating factors act as moderating constructs, verifying the conditions under which the relationships between individuals' perceived desirability and entrepreneurial intentions but also individuals' perceived feasibility and entrepreneurial intentions are established. Based on the above theorisation, future research could simultaneously examine a) the direct influence of personal factors such as motives or available human-social-financial capital that can be directly applied to the venture and situational factors such as the recent financial crisis on the formation of entrepreneurial intentions, b) the interaction effects between personal and situational factors and c) the mediating effects of personal attitude, subjective norms and perceived behavioural control on the proposed relationships, as depicted in the figure below.

**Figure 2.8 Proposed integrated psychological model with the inclusion of personal and situational factors**



### **2.5.2 General considerations and propositions**

The initial general considerations are based on the diverse definitional aspects of entrepreneurial intent. Thompson (2009) argues that the entrepreneurial intent is considered to be a more or less self-defining concept due to the fact that the entrepreneur is interpreted and operationalised differently by scholars with respect to intent. Three streams of conceptualisation of what is meant by entrepreneurial intentionality were found in this review of psychological factors. Entrepreneurial intent is considered to be the intention to create a new venture, own a venture or become self-employed and grow an existing venture. The inconsistent findings regarding the psychological constructs that determine entrepreneurial intentions can be traced to the absence of an agreed upon definition of entrepreneurial intent. In order to make comparisons feasible and effective, scholars need to compare studies that refer to the same entrepreneurial outcome. In this sense, it is argued that psychological constructs should be evaluated based on individuals' intentions not only to create a new venture, which is the main case that previous research has focused on, but also on individuals' intentions to grow an existing venture. Research on the psychological antecedents of growth-oriented intentions is scarce. Only nine studies (Lau and Busenitz, 2001; Cassar,

2007; Edelman *et al.*, 2010; Fini *et al.*, 2010; Manolova *et al.*, 2011; Yordanova, 2011; Davis and Shaver, 2012; de Jong, 2013; Douglas, 2013) out of one hundred and thirty have involved intentions to grow a venture. Further research in this direction is needed in order to gain a more holistic perspective of entrepreneurial intentions. When it comes to self-employment intentions, suggestions in this study are influenced by previous scholars who propose that this type of intention may not involve an entrepreneurial act (Carland *et al.*, 1984; Shook *et al.*, 2003). Future research should clearly be based on a conceptual and methodological basis in which self-employment refers to venture creation or growth and not simply taking over an existing venture.

Beyond the definition aspects, research should focus on distinguishing between contexts related to the entrepreneurial process that is followed by potential entrepreneurs. Sarasvathy (2001) argues that individuals perform entrepreneurial behaviours by following either causation or effectuation processes. The two processes are considered reverse, but both of them lead to entrepreneurial actions. When individuals follow a “causation process they take a particular effect as given and focus on selecting between means to create that effect while when they follow an effectuation process they take a set of means as given and focus on selecting between possible effects that can be created with that set of means” (Sarasvathy, 2001, p. 245). “Means” can be interpreted as the resources, in the form of financial-human-social capital, that are needed in order to exploit an entrepreneurial opportunity and the “effect” can be considered as the identification of an entrepreneurial opportunity (Sarasvathy, 2001). Individuals may initially conceive a business idea, in other words identify an entrepreneurial opportunity, and afterwards search for the appropriate resources in order to exploit the opportunity and turn the business idea into action. Reversing the causation approach, it could be argued that individuals may engage in entrepreneurial behaviours by starting with the appropriate resources that are to hand and, based on the available resources, may identify and evaluate an entrepreneurial opportunity, which will eventually lead to venture creation or growth. When it comes to entrepreneurial intentions, Katz and Gartner (1988) argue that venture emergence is based on four properties, namely intentionality, resources, boundary and exchange, but they do not clarify the order in which these properties take place in the entrepreneurial process. By focusing on the individual side of intentionality and resources it may be argued that

Sarasvathy's (2001) conceptualisation may contribute to better understanding in terms of which property comes first and which one follows. In the causation process, intentionality comes first while in the effectuation process intentionality may come second, as the possession of resources is a critical prerequisite that comes first. Previous research on entrepreneurial intentions, as indicated in the literature both in the venture creation and growth context, adopts the causation process, which is the typical case for entrepreneurs (Williams *et al.*, 2013). It is crucial to highlight possible differences or similarities that may occur between individuals who follow diverse entrepreneurial processes in order to gain a better understanding of entrepreneurship. Therefore, the focus should be redirected to individuals that follow effectuation processes by determining the applicability and ecological validity of the psychological theories/models in a new context.

Another contextual differentiation that is necessary in order to explain when certain psychological factors influence entrepreneurial intentions concerns individuals' cultural influences. Despite the fact that cross-cultural research has highlighted differences and similarities among countries and regions, still a more detailed conceptualisation is vital in order to reach robust conclusions regarding the role of culture. In this review research findings were grouped according to information related to participants' residence and nationality. The vast majority of articles did not indicate whether the country in which the research was conducted referred to participants with the same nationality and residence. Most importantly, the interpretation of their findings was not based on or directly linked to the cultural dimensions that determine diverse cultural contexts. According to Hofstede (1980, 1991, 2001) individualism-collectivism represents behaviour regulations that express the cultural tendency to place more value either on the self or the group. The differentiation between a cultural context of collectivistic perceptions that are based on high power distance, masculinity and uncertainty avoidance and the cultural context of individualistic perceptions characterised by lower power distance, masculinity and uncertainty avoidance (Hofstede, 2001) are crucial in terms of determining the role of culture in entrepreneurial intentions. Considering that cultural values can be transmitted from an individual's country of origin or country of residence or from a combination of both, future research that differentiates the cultural background of individuals and examines its influence on the relationship between

psychological factors and entrepreneurial intentions is needed. In this regard, research should use comparative studies based on the differentiation between not only collectivistic and individualistic national cultural backgrounds but also self-construal cultural values representing individual-level constructs of individualist and collectivist values (Triandis, 1989). From one perspective, this would enable future studies to mark differences in the same ethnic groups as individuals may act collectively or individually even if they have the same ethnic cultural background (Triandis, 1993). From another perspective, self-construal measurements of individuals' dependent or independent self will allow scholars to examine the role of culture among individuals with diverse nationalities who live in the same country and explore the extent to which immigrants sustain, abandon or mix their cultural values with the cultural values of their country of residence (Markus and Kitayama, 1991). The review suggests that only Siu and Lo's (2013) previous work has extensively examined the moderating role of culture regarding the effects of psychological factors on entrepreneurial intentions. Therefore, more research is needed on the cultural contingencies that determine entrepreneurial intentions, as indicated in Hayton *et al.*'s (2002) behavioural conceptual framework.

Regarding methodological approaches concerning the different sample types used to investigate the link between psychological constructs and entrepreneurial intentions, findings show that scholars have mainly focused on student samples. Research that went beyond student samples (Kolvereid and Isaksen, 2006; Carr and Sequeira, 2007; Sequeira *et al.*, 2007; Fernández *et al.*, 2009; Fini *et al.*, 2010; Kautonen *et al.*, 2010; Chuluunbaatar *et al.*, 2011; Kautonen *et al.*, 2011; Liñán *et al.*, 2011b; Sommer and Haug, 2011; Goethner *et al.*, 2012; Guzmán-Alfonso and Guzmán-Cuevas, 2012; Mayhew *et al.*, 2012; Bullough and Renko, 2013; Bullough *et al.*, 2013; Hormiga *et al.*, 2013; Kautonen *et al.*, 2013; Kibler, 2013; Laguna, 2013; Uygun and Kasimoglu, 2013; Vinogradov *et al.*, 2013) represents a very small minority. Future research needs to overcome convenience samples consisting of students. Shook *et al.* (2003) recommend that future research should study venture creators. The term "venture creators" refers to entrepreneurs but does not clarify whether they refer to potential entrepreneurs or already existing entrepreneurs. One problematic issue regarding the examination of entrepreneurial intentions among existing entrepreneurs is that participants will be asked to use their memory in order to respond to questions related to past feelings,

perceptions and beliefs. Recall, self-justification and survivorship biases could possibly occur and reduce the validity of the intentions obtained (Conway and Ross, 1984; Gartner, 1989). On this basis, it is proposed that sample methodological approaches should be differentiated based on the entrepreneurial outcome. The psychological antecedents of entrepreneurial intentions in the form of venture creation should be examined on a random sample of individuals that have never been engaged in entrepreneurial activities and group them, for instance, according to their age (young, middle aged, old), employment status (employed or unemployed), residence, nationality, and family entrepreneurial experience. When it comes to venture growth, the inclusion of existing entrepreneurs in the sample group is vital because growth-oriented intentions presuppose and demand the establishment of a venture in order to be based on realistic self-perceptions of growth. This is not to say that student samples have no place in entrepreneurial intentions research. What is proposed is to limit their use to studies that are contextually interrelated with students. For instance, research that combines the role of entrepreneurial education with the psychological determinants of venture creation intentions needs to be based on student samples in order to evaluate the proposed relationships.

The entrepreneurial intent is a legitimate and useful proxy for entrepreneurship that can be used as not just a dependent but also as an independent construct influencing entrepreneurial intentions (Thompson, 2009). Despite the fact that previous meta-analytic studies in the psychological field indicate that intentions have strong to medium associations with actual behaviour scholars debate whether intentions do or do not always lead to actions (Conner *et al.*, 2000; Sheeran, 2002; Webb and Sheeran, 2006). According to Armitage and Conner (2001) the positive relationship between intention and behaviour is more likely to exist even if it is not strong, which underlines the importance of not only testing intentions but also going a step further by providing evidence regarding the link between intentions and behaviour. Although Shook *et al.* (2003) called for a longitudinal research design in terms of determining the link between entrepreneurial intentions and behaviour, research is still extremely vague. Only five studies (Kolvereid and Isaksen, 2006; Chuluunbaatar *et al.*, 2011; Lanero *et al.*, 2011; Guzmán-Alfonso and Guzmán-Cuevas, 2012; Kautonen *et al.*, 2013) on the psychological antecedents of intentions have demonstrated the positive relationship

between intentions to engage in entrepreneurial activities and actual entrepreneurial engagement. From a psychological perspective, the determination of the intention-behaviour relationship is vital in depicting the entrepreneurial process holistically. Therefore, scholars should consider the link between intentions and behaviours as the initial wave regarding future research. On the second wave of future research, the confirmation of the relationship may open new horizons in examining the mediating role of entrepreneurial intentions on the relationship between entrepreneurial traits, motives, self-efficacy and intentions. This would empirically provide answers to questions related to why the link between the aforementioned constructs may appear relatively weak or even insignificant in exceptional cases. Beyond the exploration of the intention-behaviour relationship, the moderating role of perceived behavioural control in this relationship (Ajzen and Fishbein, 2005) in future studies is considered to be indispensable. Moreover, the role of perceived behavioural control as a moderator in the intention-behaviour relationship will be stronger when individuals' behavioural control is in line with their actual behavioural control (Ajzen and Fishbein, 2005). Future research could explore this proposition.

## **2.6 Conclusion**

This study contributes to the better understanding of the research approaches and findings in the past twenty years of entrepreneurial intentionality research and has proposed new research directions. The systematic literature review shows diverse findings regarding the applicability of the most examined psychological theories and models, namely personality theory, motivation theory, the Entrepreneurial Event model and Theory of Planned behaviour, while the same does not apply for the well-established relationship between self-efficacy and entrepreneurial intentions. This controversy indicates that there is room for further development. Therefore further research is needed that goes beyond the applicability and ecological validity of the identified psychological models by investigating possible mediating and moderating effects among the psychological constructs. It is of great importance to integrate the existing psychological factors in one conceptual model by examining the applicability of the Entrepreneurial Potential model (Krueger and Brazeal, 1994; Krueger, 2000) and the Trans-Contextual model (Hagger and Chatzisarantis, 2012). Further research could extend the already identified psychological models by using less parsimonious

approaches and incorporating the way that the individual's background factors, in the form of personal and situational factors, influence intentions directly or indirectly as proposed in Bird's (1988), Ajzen's (2005) and Krueger's (2000) conceptual models.

Initially, the propositions applied to all the identified psychological theories and models are related to the use of an agreed upon definition of entrepreneurial intent. In this regard, the vast majority of previous research has conceptualised entrepreneurial intent as venture creation intentions. Considering that entrepreneurial intentions may also entail intentional beliefs about engaging in growth-oriented actions, more research is needed in this direction in order to highlight possible differences or similarities in the psychological aspects of the entrepreneurial processes. This would suggest that future research has to indicate clearly and thoroughly how entrepreneurial intent is conceptualised in order to allow for feasible comparison among the studies. Secondly, motivated by Sarasvathy's (2001) conceptualization and its role in the venture creation and growth process, future research could focus on individuals that follow effectuation processes who decide to engage in entrepreneurial activities by starting with the available means at hand and afterwards search for an entrepreneurial opportunity based on the availability of these resources. This would evaluate possible variation between individuals following an effectuation and those following a causation process (this is the case concerning previous research) in terms of the psychological paths that lead to entrepreneurial intentions and actions. Thirdly, a comprehensive examination of the role of culture is absent in previous studies. The findings indicate that the psychological factors determining entrepreneurial intentions diverge according to individuals' residence and nationality. Therefore, a more detailed examination of the moderating role of culture, by focusing on cross-national and cross-regional variations in the form of collectivistic/ individualistic values (Hofstede, 2001) and self-construal values (Triandis, 1989), will explain contradictions regarding which and how psychological constructs shape entrepreneurial intentions. Fourthly, new studies need to go beyond student samples and provide evidence concerning the applicability of psychological theories and models in more diversified groups of the population. Moreover, it is rational to utilise student samples only when these constitute an integral part of the general research context. Finally, entrepreneurial intentionality research should examine intentions as dependent and independent constructs. In this sense, further investigation



is needed in order to determine the link between intention and behaviour in the entrepreneurial domain and additionally examine the moderating role of perceived behavioural control and the influence of actual control in the proposed relationship.

In this study the methodological examination of the psychological theories and models used in entrepreneurial intentionality research has been limited to the sample type, regional variations and contextual considerations. Future review studies could extensively concentrate on the way that the psychological constructs have been measured and accordingly make propositions for future research directions. One possible examination could focus on the measurement of personal attitude, subjective norms and perceived behavioural control in the Theory of Planned behaviour and explore whether scholars have incorporated first and second order measurements of the constructs, as indicated in Rhodes and Courneya's (2003a) differentiation concerning instrumental and affective components of personal attitudes, injunctive and descriptive norm components of subjective norms and self-efficacy and controllability components of perceived behavioural control. It is also rational to declare whether the entrepreneurial intention has been measured as a single or multiple item construct (see (van Hooft and de Jong, 2009). Determining methodological differences, but most importantly proposing a common, detailed, supplemented and validated measurement, may from one perspective explain contradictory findings in past research while from another perspective it will overcome problems related to potential future diverse results concerning the applicability and ecological validity of the psychological theories and models and therefore make comparisons more feasible.

## **2.7 Chapter summary**

This chapter was based on a literature review study of the cognitive approaches to entrepreneurship by focusing on the psychological factors that determine entrepreneurial intentionality. Research papers published during the period 1993-2013 have been reviewed and five psychological theories/models namely personality theory, motivation theory, self-efficacy theory, entrepreneurial event model and theory of planned behaviour implemented in the entrepreneurial domain have been identified. Findings regarding the applicability of the theories/models are contradictory and therefore new insights are needed in order to shed light on the role of the psychological

aspects that jointly with background and situational factors determine entrepreneurial intentions.

The chapter provided diverse and detailed recommendations regarding future research that may extend or combine the existing psychological theories/models of entrepreneurial intentions. More interestingly, this chapter highlighted how previous research has mainly focused on the determinants of entrepreneurial intentions by mainly considering causation instead of effectuation processes, as indicated in Sarasvathy's (2001) work. Due to time constraints, this thesis will adopt part of the propositions identified in this chapter by focusing on investment intentions. Particularly, the Table below presents the core recommendations related to the empirical studies which will be extensively analysed in Chapter 4, 5 and 6. The following Chapter will present the overall methodological approach that has been followed in order to meet the research objectives and the key recommendations of this thesis.

**Table 2.8 Key recommendations derived from the literature review that relate to the empirical studies**

<b>Empirical Studies</b>	<b>Key recommendations</b>
Empirical Study I (Chapter 4)	<ul style="list-style-type: none"> <li>➤ Investigation of entrepreneurial intentions in the investment context by following effectuation processes.</li> <li>➤ Examination of the link between human, social, financial capital and intentions as indicated in the Entrepreneurial Intentionality Model by incorporating the moderation role of the financial crisis, as indicated in the push theory.</li> <li>➤ Examination of the link between motives and intentions by incorporating the moderating role of the financial crisis, as indicated in the push/pull theory.</li> <li>➤ Testing the applicability of the proposed theoretical model in a non-student sample group.</li> </ul>
Empirical Study II (Chapter 5)	<ul style="list-style-type: none"> <li>➤ Investigation of entrepreneurial intentions in the investment context by following effectuation processes.</li> <li>➤ Examination of the interconnection among the psychological constructs of the Theory of Planned Behaviour by exploring mediating and moderating effects.</li> <li>➤ Testing the applicability of the proposed theoretical model in a non-student sample group.</li> </ul>
Empirical Study III (Chapter 6)	<ul style="list-style-type: none"> <li>➤ Investigation of entrepreneurial intentions in the investment context by following effectuation processes.</li> <li>➤ Examination of the link between human, social, financial capital and intentions Entrepreneurial Intentionality Model by incorporating the mediation role of the more proximal antecedents of intentions, as indicated in the Theory of Planned Behaviour.</li> <li>➤ Determination of the role of culture in the aforementioned relationships by studying the possible differences/similarities between individualistic and collectivistic cultures.</li> <li>➤ Testing the applicability of the proposed theoretical model in a non-student sample group.</li> </ul>

## **Chapter 3. Methodological Approach**

### **3.1 Research philosophy**

A paradigm is defined as the basic belief system or worldview that concerns the ontological, epistemological and methodological assumptions of research and serves as a guiding map for the researcher and the subject under investigation (Guba, 1990; Kirkwood and Campbell-Hunt, 2007). Researchers are influenced by their ontological assumptions, which provide answers to questions related to the nature of reality and social beings (Guba, 1990). Moreover, researchers approach their studies and particularly attempt to answer research questions based on certain epistemological assumptions which concern the way that individuals conceptualise/make sense of the world and how knowledge might be constructed and communicated in terms of 'the nature of knowledge, its possibility, scope and general basis' (Hamlyn, 1995; Pittaway, 2005). Finally, methodological assumptions come into consideration by providing valuable answers regarding the way that the researchers should acquire knowledge. At the two extreme ends of a philosophical continuum stand two main philosophical approaches: interpretivism and positivism (Burrell and Morgan, 1979). Researchers identify some variations in the philosophical approaches that a researcher may take.

An interpretivist paradigm's ontology suggests that there is no single reality while its epistemology seeks to understand through individuals' constructions of experience in the world rather than some external reality (Kirkwood and Campbell-Hunt, 2007). Research questions that are guided from an interpretivism view are based upon the approach that the researcher can understand the world and gain knowledge only by understanding those individuals or phenomena that are being studied and thus understanding should be based on an in depth analysis of qualitative data (Crotty, 1998; Johnson and Clark, 2006). The subjectivist ontological approach is also well suited to constructionism, where the researcher focuses on the collective construction of social phenomena, and subjectivism, where one focuses on the multiple realities that exist when social reality is imposed by social actors rather than being constructed or interpreted (Maylor and Blackmon, 2005).

The main elements/characteristics of the positivist view concern concepts related to law-like statements, nominal definition of concepts, operational definition/partial

interpretation, derivation of hypotheses for empirical examination, formal language (logic or maths) to express laws, variables related together empirically and use of statistical techniques (Crotty, 1998; Gartrell and Gartrell, 2002). Positivism adopts the philosophical position of natural scientists, where the researcher explains social reality based on objective judgements that are gathered through well attested facts and can be generalised to the population under investigation (Harre, 1986; Remenyi and Williams, 1998). Positivism's a) ontology is one of realism, assuming that a knowable reality is out in the world and this is driven by immutable natural laws that need to be discovered, b) epistemology is objectivist, where a distant, non-interactive posture is adopted by the researchers and c) methodology is experimental and manipulative, with a focus on quantitative methods such as survey instruments (Guba, 1990; Kirkwood and Campbell-Hunt, 2007). As a ground rule, positivist studies usually adopt a deductive research approach, while interpretive studies use an inductive research approach (Crowther and Lancaster, 2008). The objectivistic ontological perspective is also recognised within the realism approach, which reflects the view that theories refer to real features of the world and reality refers to whatever is in the universe (Schwandt, 2001). A different positioning comes from the critical realism approach, which acknowledges that researchers cannot directly know the reality but they can study the world as if they can and that the knowledge of reality can be good enough (Maylor and Blackmon, 2005). The core ontological, epistemological and methodological differences identified by Hudson and Ozanne (1988) and Saunders *et al.* (2009) are presented in Table 1.

The paradigmatic positioning of entrepreneurship research has traditionally been mainly positivist (Grant and Perren, 2002; Kirkwood and Campbell-Hunt, 2007). From an epistemological perspective the empirical studies of this thesis adopt a positivistic approach, where the researcher explains social reality by being objective and is not affected by the subject under investigation (Remenyi and Williams, 1998). The main reason for this choice is illustrated in the nature of entrepreneurial research and especially entrepreneurial intentions. The exploration of entrepreneurial behaviours by studying entrepreneurial intentions is grounded on psychological metrics that require the use of quantitative methods in order to capture the general pattern of regularities (Balashov and Rosenberg, 2002; Michell, 2003; Collis and Hussey, 2009). Considering that this research concerns the factors that may affect entrepreneurial intentions,

generalisability was enhanced by adopting a highly structured research approach, the deductive research approach, which allows for theory/hypothesis testing through the causal explanation of the relationships between and among the study variables (Robson, 2002; Saunders *et al.*, 2009).

**Table 3.1 Core assumptions in the positivist and interpretive approaches (Hudson and Ozanne, 1988; Saunders *et al.*, 2009)**

<b>Ontological Assumptions</b>	<b>Interpretive Approach</b>	<b>Positivist Approach</b>
Nature of reality	<ul style="list-style-type: none"> <li>▪ Socially constructed</li> <li>▪ Multiple</li> <li>▪ Holistic</li> <li>▪ Contextual</li> </ul>	<ul style="list-style-type: none"> <li>▪ Tangible</li> <li>▪ Single</li> <li>▪ Fragmentable</li> <li>▪ Divisible</li> </ul>
Nature of social beings	<ul style="list-style-type: none"> <li>▪ Voluntaristic</li> <li>▪ Proactive</li> </ul>	<ul style="list-style-type: none"> <li>▪ Deterministic</li> <li>▪ Reactive</li> </ul>
<b>Epistemological Assumptions</b>	<b>Interpretive Approach</b>	<b>Positivist Approach</b>
Knowledge generated	<ul style="list-style-type: none"> <li>▪ Idiographic</li> <li>▪ Time-bound</li> <li>▪ Context-dependent</li> </ul>	<ul style="list-style-type: none"> <li>▪ Nomothetic</li> <li>▪ Time-free</li> <li>▪ Context-independent</li> </ul>
View of causality	<ul style="list-style-type: none"> <li>▪ Multiple-Simultaneous shaping</li> </ul>	<ul style="list-style-type: none"> <li>▪ Real causes exist</li> </ul>
Research relationship	<ul style="list-style-type: none"> <li>▪ Interactive-Cooperative</li> <li>▪ No privileged point of observation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Dualism-Separation</li> <li>▪ Privileged point of observation</li> </ul>
<b>Methodological Assumptions</b>	<b>Interpretive Approach</b>	<b>Positivist Approach</b>
Inductive versus Deductive	<ul style="list-style-type: none"> <li>▪ Gaining an understanding of the meanings humans attach to events</li> <li>▪ A close understanding of the research context</li> <li>▪ A more flexible structure to permit changes of research emphasis as the research progresses</li> <li>▪ A realisation that the researcher is part of the research process</li> </ul>	<ul style="list-style-type: none"> <li>▪ Scientific principles</li> <li>▪ The need to explain causal relationships between variables</li> <li>▪ Moving from theory to data</li> <li>▪ The application of controls to ensure validity of data</li> <li>▪ A highly structured approach</li> <li>▪ Researcher independence from what is being researched</li> <li>▪ The operationalisation of concepts to ensure clarity of definition</li> </ul>

### 3.2 Research methods

Research methods designate the researcher's choice regarding the techniques that are used in order to collect and analyse the data that are able to provide a more valid investigation, leading to a better understanding of complex problems or situations (Easterby *et al.*, 2008). The decision regarding the appropriate research methods is predisposed by the identification of a clear research type, which should be strictly related to the research purpose. According to Christensen, Johnson and Turner (2011) a research project can be based on a) exploratory research, which is employed for understanding complex problems or situations and raising hypotheses by identifying underlined principles b) descriptive research, which is used for describing a specific problem or situation and finally c) explanatory/confirmatory/causal which is utilised for testing hypotheses by understanding causal relationships.

Zikmund (1984) suggested that the degree of uncertainty about the research problem determines the type of research, where researchers explore a phenomenon when key variables are not defined or describe a situation when key variables are defined or explain a fact when key variables and relationships are defined. Based on the above theoretical research classification and considering that the researcher's purpose is to determine the existence of the relationships between the study variables, particularly the links between entrepreneurial intentions and psychological - situational - personal factors by testing the applicability of theoretical models, this thesis is an example of explanatory research. This explanatory research takes into account the diverse methodological techniques. In this regard, two core and diverse research method approaches, namely quantitative and qualitative, come into consideration (Ghauri *et al.*, 1995).

In a qualitative research approach, the researcher is concerned with understanding human behaviour from the informant's perspective and assumes a dynamic and negotiated reality (Minichiello, 1990). The qualitative research approach is well-suited to interpretivism, where subjectivity is present due to the fact that the focus is turned on the subjective world (Newman, 2014). The role of theory in research is inductive (theory generation), where the researcher is involved in theory building, which may serve as potential hypotheses for future research investigations (Cooper and Schindler, 2011). Qualitative approaches i) require deeper research relying on selective/small

research samples, ii) are based on collecting non-numerical observational data through measuring social realities, where the researcher is involved actively in the data collection process, iii) necessitate a thematic data analysis and iv) produce results that are difficult to be construed and impossible to be generalised as they refer to specific cases only (Silverman, 2011).

However, by following a quantitative research approach the researcher is concerned with discovering facts about social phenomena and assumes a fixed and measurable reality (Minichiello, 1990). In the quantitative research methods, a positivistic research approach is present by shifting the focus onto the objective world (Saunders *et al.*, 2009). The role of theory in research is deductive (theory testing), where the researcher is involved in formulating hypotheses based on existing theory and testing the applicability of the theory to practice (Bryman, 2012). When it comes to samples, data collection, data analysis and results the quantitative technique i) is based on wider research that requires broad/large research sample groups, ii) concerns collecting numerical data by measuring objects/facts, where the researcher is separated from the participants in the data collection process, iii) involves numerical comparisons and statistical inference and iv) provides outputs where findings are easy to be construed and possible to be generalised (Balnaves and Caputi, 2001). The table below summarises the core differences between qualitative and quantitative methods.



**Table 3.2 Contrasting features of qualitative and quantitative research methods (Matthews and Ross, 2010)**

Qualitative Methods	Quantitative Methods
<ul style="list-style-type: none"> <li>▪ Interpretivism</li> </ul>	<ul style="list-style-type: none"> <li>▪ Positivism</li> </ul>
<ul style="list-style-type: none"> <li>▪ Research questions may be developed using subsidiary questions</li> </ul>	<ul style="list-style-type: none"> <li>▪ Research questions may be set out as testable hypotheses</li> </ul>
<ul style="list-style-type: none"> <li>▪ The research questions can be answered by describing and explaining events and gathering participants' understandings, beliefs and experiences</li> </ul>	<ul style="list-style-type: none"> <li>▪ The research questions can be answered and hypotheses can be tested by counting events and using statistical analysis</li> </ul>
<ul style="list-style-type: none"> <li>▪ Researcher may only have a general idea of what he/she is looking for</li> </ul>	<ul style="list-style-type: none"> <li>▪ Researcher normally knows what he/she is looking for</li> </ul>
<ul style="list-style-type: none"> <li>▪ Research design/strategy may be fluid and evolutionary</li> </ul>	<ul style="list-style-type: none"> <li>▪ Research design/strategy is usually fixed before data collection</li> </ul>
<ul style="list-style-type: none"> <li>▪ Researcher is involved</li> </ul>	<ul style="list-style-type: none"> <li>▪ Researcher is not part of the research</li> </ul>
<ul style="list-style-type: none"> <li>▪ Usually no use of tools</li> </ul>	<ul style="list-style-type: none"> <li>▪ Often use of tools to collect data</li> </ul>
<ul style="list-style-type: none"> <li>▪ Data may be in any form</li> </ul>	<ul style="list-style-type: none"> <li>▪ Data is often in the form of numerical codes</li> </ul>
<ul style="list-style-type: none"> <li>▪ Not possible to generalise from data</li> </ul>	<ul style="list-style-type: none"> <li>▪ Possible to generalise from data</li> </ul>

Despite the fact that scholars (e.g. Newman and Benz, 1998; Tashakkori and Teddlie, 1998; Onwuegbuzie and Leech, 2005) propose that quantitative and qualitative methods may not stand in isolation, the purpose of this research, which is strongly related to the examination of the proposed theoretical relationships between/among the study variables, indicates that a mono-method research choice, particularly a quantitative research approach (Balnaves and Caputi, 2001), is needed in order to answer the research questions and meet the research objectives. What is more, the choice of a specific research design based on preferred research methods follows the determination of the methodological paradigm and therefore a good fit between paradigms and methods is essential (Pawson, 2000). Considering that the researcher adopts a purely positivistic and deductive research approach implies that the implementation of quantitative research methods is vital for this thesis (Bryman and Bell, 2007). This thesis is employing a quantitative research technique and therefore requires a relatively large sample in order to collect numerical data and a statistical

inference in order to generalise the core findings and provide answers to the research questions (Collis and Hussey, 2009).

### **3.3 Data collection**

#### **3.3.1 Survey approach**

A survey, an experiment, a case study, action research, a grounded theory, an ethnography or archival research, can be used either for exploratory, descriptive or explanatory research while some of them clearly belong to an inductive or deductive research approach (Yin, 2003; Saunders *et al.*, 2009). De Vaus (2002) points out that a survey strategy is widely regarded as being inherently related to positivism and deductive approaches. Based on the fact that the research objectives/questions of this thesis require the exploration of particular relationships and the reproduction of models based on these relationships and that this research adopts a positivist and deductive approach, a survey strategy is used (Fowler, 2014). A survey is a way of collecting data from a range of respondents that are representative of a specific population of interest by asking questions in order to record their verbal or written attitudes, opinions and consequently behaviours (Maylor and Blackmon, 2005; Baker and Foy, 2008; Ghauri and Gronhaug, 2010). Surveys may take diverse forms, such as structured interviews that are conducted face to face, over the telephone or electronically, structured observations that record individuals' behaviours over a period of time and questionnaires (Maylor and Blackmon, 2005). Bernard (2012) clearly describes the advantages and disadvantages of the aforementioned survey forms and argues that no single form is superior to the other and implies that the chosen survey form should be directly related to the purpose of the proposed research project. Given that this thesis is based on deductive methodological assumptions and that the core purpose is to determine the applicability of diverse theoretical propositions, the collection of quantitative data is vital for the investigation of the proposed relationships between and among the study variables and a questionnaire survey is therefore used in order to collect the appropriate data (Blair *et al.*, 2013). Questionnaire survey types range from drop-off surveys, which require the researcher to travel to the respondents' location, and drop off the questionnaire, which will be picked up later, fax surveys that use fax machines as a way for respondents to receive and return the questionnaire, mail surveys,

where questionnaires are distributed through electronic mail, to web surveys, where questionnaires are posted on a website or social media space (Zikmund *et al.*, 2012). Therefore, this thesis is simultaneously using a mail type and a web type survey, in order to raise the response rate and speed, minimise cost, and respond to the strict time constraints of this research (Trochim and Donnelly, 2008; Greenlaw and Brown-Welty, 2009; Groves *et al.*, 2011). Maylon and Blackmon (2005) suggest that a survey can be successful and meet the research objectives if the researcher identifies and elaborates in detail two key factors, namely the instrument design and the sample approach. These key factors are extensively discussed in the following two sub-sections.

### ***3.3.2 Questionnaire design***

A questionnaire is a list of questions, each with a range of answers, which is based on a format that enables standardised, relatively structured, data to be gathered about each of a large number of cases (Matthews and Ross, 2010). When it comes to the questionnaire design diverse aspects should be taken into consideration. The researcher must decide among diverse types of questionnaires that can be used in a research project. According to the way that questionnaires are administered, there are self-administered questionnaires, which are usually completed by the respondents, and interviewer-administered questionnaires, which are recorded by the interviewer on the basis of each respondent's answer (Saunders *et al.*, 2012). Self-administered-questionnaires can be delivered to and collected from the respondents in diverse ways. This can be by post (postal questionnaires), by delivering to and collecting from a convenient location for the respondent (delivery and collect questionnaires), or by using the mail and web (internet-mediated questionnaires), where the respondent has to fill in a computer-assisted set of questionnaires and responses are directly delivered to the researcher (Maylor and Blackmon, 2005). Considering that this thesis is following an internet based survey that requires a large and geographically dispersed sample with relatively quick responses and automated data easy to analyse, self-administered internet-mediated questionnaires are used (Bernard, 2012). The fact that the researcher has no direct contact with the potential participants and that the data collection process is mainly based on the participants' perspective, a brief introductory section is included in each

questionnaire as a cover letter explaining the purpose of each empirical study in order to inform participants and raise the response rates (Saunders *et al.*, 2009).

Self-administered internet based questionnaires are chosen based on the type of data questions that need to be collected. Particularly, scholars initially distinguish between secondary and primary data (Trochim and Donnelly, 2008). Considering that the research questions of this thesis can only be answered by collecting and analysing primary data, one must go into more depth and explore the diverse types of primary data. In this sense, the questionnaires used in this thesis are based on facts that represent data about specific people and events, status and state of affair data that relate to demographic matters, awareness and knowledge data that determine the effects of a particular event, attitude data about a specific behaviour, motivation and intention data (Ghuri and Gronhaug, 2010; Matthews and Ross, 2010). In order to collect the aforementioned data, diverse types of questions can be used. The core diversification comes in the light of open-ended questions, where the respondent is free to provide an answer and closed-ended questions, where the respondent is required to choose (Dillman, 2000; Couper *et al.*, 2001). Closed-ended questions may vary from quantity questions, where the response is a number giving the amount, list questions, in which the respondent is offered a list of items, any of which may be selected, category questions, where only one response can be selected from a given set of categories, ranking questions, in which the respondent is asked to place something in order, rating questions, where a rating device is used to record responses, to grid questions, in which responses to two or more questions can be recorded by using the same matrix (Matthews and Ross, 2010; Saunders *et al.*, 2012).

Bernard (2012) points out that there is no simple answer as to whether open or closed ended questions are better and that this is something that the researcher needs to decide by considering the different kinds of data that the two formats produce. In this thesis, closed-ended questions in order to measure the core variables of each empirical study and self-constructed closed-ended questions and a single open-ended question (nationality and residence) that could be easily coded and included in the analysis are used for the demographic and control variables. The first reason for choosing closed-ended questions adopted/adapted from previous research for the core variables was to ensure the validity and reliability of the measurements while the second one relates to

the fact that they are quicker and easier for the respondent to answer due to their minimal writing requirements, which can increase the response rate and accuracy of the responses (Saunders *et al.*, 2015). When it comes to the more specific types of closed-ended questions, this thesis includes filter questions in order to determine whether the participants are actually eligible to participate in the surveys, a) quantity questions e.g. for determining participants' age, b) category questions e.g. for determining participants' level of financial capital (dummy variables limited to only two options e.g. gender also falls into this type of question; Ghauri *et al.*, 1995) and c) rating questions e.g. for measuring participants' level of social capital and investment intentions.

Researchers usually use scales as a device providing a range of values that correspond to different values in a concept being measured by diversifying the level of scale measurement (Zikmund *et al.*, 2012). In this regard, scales are classified into nominal scales, in which values are assigned to an object for identification or classification purposes only, ordinal scales, which are based on ranking questions, ratio scales, where absolute quantities can be represented even with a meaningful absolute zero and, finally, interval scales, which use rating questions and numbers to rate objects or events so that the distances between the numbers are equal (Hair *et al.*, 2011; Zikmund *et al.*, 2012). In this thesis, constructs and variables are measured based on nominal scales e.g. age, ordinal scales e.g. employment status, ratio scales e.g. organisational/job tenure, while the majority is based on interval scales e.g. motivation.

A core category widely used is the Likert point scaling, which relates to metric scales (i.e. ratio and interval scales) where the ratings of the items are summed to get the final scale score (Trochim and Donnelly, 2008). A scale must contain multiple items where each item is a statement and must measure something that has a quantitative measurement continuum with no "right" or "wrong" answers (Spector, 1992). The value of measuring constructs by using multiple item scales is not merely based on the notion that the multiple item scales are more valid, accurate and reliable than the single item scales but on the fundamental difference that in single item measurement researchers do not have sufficient information to estimate their measurement properties and therefore the degree of validity, accuracy and reliability is often unknowable (Blalock, 1970; McIver and Carmines, 1981; Nunnally and Bernstein, 1994). Therefore, in this thesis the core constructs under investigation have been measured based on multiple-item Likert-

type scales. Particularly, constructs and variables are based on scales and items that are measured in 5-point, 6-point, 7-point and 10-point Likert scales. Tables 3 and 4 below present the measurements that have been used in this thesis.

**Table 3.3 Measurements: Demographic/Control variables**

	<b>Variables</b>	<b>Options</b>
<b>ES II</b>	<b>Age</b> Participants were asked to indicate the year that they were born (e.g. 1935)	.....
	<b>Marital status</b> Participants were asked to indicate their marital status.	Never married Engaged Married or in Civil Partnership Divorced Widowed Separated
	<b>Educational level</b> Participants were asked to indicate their highest educational level.	(1)= Primary School (2)= High School (3)= Technical Education (4)= Undergraduate degree (5)= Postgraduate degree (6)=PhD
	<b>Job tenure</b> How many hours do you work per week? If you are currently unemployed and you do not work, please indicate how many hours you used to work per week in your last employment. If you have never worked please enter 0.	.....
<b>ES III</b>	<b>Career stage</b> Participants were asked to determine in which career stage they are according to their years of employment.	(1)=have never worked (e.g. you have been a full time student so far) (2)=Early (up to 10 years of employment) (3)=Middle (10 years or more, but up to 20 years of employment)
<b>ES II</b>	<b>Gender</b>	
<b>ES III</b>	Participants were asked to indicate their gender.	(1)=Male, (2)=Female
	<b>Employment status</b> Participants were asked to indicate their current employment status.	(1)=Paid-employment (2)=Self-employment (3)=Unemployed.

**Table 3.4 Measurements: Core variables**

	<b>Constructs/Variables</b>	<b>Items</b>	<b>Options</b>	<b>Cronbach's <math>\alpha</math></b>
ES I	<b>Human Capital</b>			
	<b>Educational level</b> Please indicate the highest level of education that you have achieved:		(1)= Primary School (2)= High School (3)= Technical Education (4)= Undergraduate degree (5)= Postgraduate degree (6)=PhD	
	<b>Organisational tenure</b> Please indicate how many years of working experience you have in your current or last job.		.....	
	<b>Skills</b>			
	<b>Skills from education</b> Please rate your level in the six following skills, gained through education:	Management Marketing Financial Legal Technical IT	(1)=no skill, to (5)=advanced skill	ES I; $\alpha=.70$
	<b>Skills from experience</b> Please rate your level in the six following skills, gained through working experience:			ES I; $\alpha=.74$

<b>ES I</b>	<b>Financial and Non-Financial Resources (Kim <i>et al.</i>, 2006)</b>	Which of the following resources that you currently own would you be prepared to share in a new venture that you truly believed in?	Venture Capital (cash) Capital: Land Capital: Buildings Capital: Equipment Capital: Machinery Capital: Transportation Capital: Raw materials IT resources Human resources	(1) = I do not have this resource (2) =Not prepared at all, to (6) =Very prepared	
<b>ES I</b>	<b>Financial Crisis in Income</b>	In which way did the financial crisis affect your financial situation?		(1)=very negatively, to (10)=very positively	
<b>ES I</b>	<b>Financial Crisis in Work</b>	In which way did the financial crisis affect your work?		(1)=very negatively, to (10)=very positively	
<b>ES I</b>	<b>Motivation (Carter <i>et al.</i>, 2003)</b>	To what extent would the following reasons be important to you if you were to engage in investment activities?			
	<b>Financial Success</b>		To earn a larger personal income. To give myself, my dependents financial security. To have a chance to build great wealth or a very high income.	(1)=to no extent (2)=little extent (3)=some extent (4)=great extent (5)=to a very great extent	ES I; $\alpha=.83$
	<b>Independence</b>		To have greater flexibility for my		ES I; $\alpha=.64$ ( $r=.47$ )



		personal and family life. To have considerable freedom to adapt my own approach to work.		
	<b>Innovation</b>	To be innovative and in the forefront of technology. To develop an idea for a product. To have the power to greatly influence an organisation.		ES I; $\alpha=.82$
	<b>Recognition</b>	To achieve something and get recognition for it. To achieve a higher position for myself in society. To be respected by my friends.		ES I; $\alpha=.79$
	<b>Self-realisation</b>	To challenge myself. To fulfil a personal vision. To lead and motivate others. To grow and learn as a person.		ES I; $\alpha=.82$
<b>ES I</b>	<b>Social Capital (Chen <i>et al.</i>, 2009)</b>			
<b>ES</b>	<b>Bonding Social Capital</b>			
<b>III</b>	Members within the social circle.	Family members Relatives Neighbours	(1)=many/all, to (5)=a few/none	ES I; $\alpha=.65$ ES III; $\alpha=.70$
	Contacts with the members of the social circle.	Friends Co-workers/colleagues Old classmates		ES I; $\alpha=.73$ ES III; $\alpha=.67$
	Trust in the members of the social circle.			ES I $\alpha=.71$ ES III $\alpha=.75$

	Help gained from members within the social circle.			ES I; $\alpha=.82$ ES III; $\alpha=.77$
	Level of resources-assets possessed by members of the social circle.	Certain political power Wealth or owners of an enterprise or company Broad connections with others High reputation/influential High school or more education Professional job		ES I; $\alpha=.75$ ES III; $\alpha=.74$
	<b>Bridging Social Capital</b>			
	Contact with groups/organisations	Governmental and Political Economic Social Cultural Recreational and Leisure	(1)=all/very often, to (5)=none/never	ES I; $\alpha=.81$ ES III; $\alpha=.77$
	Help from groups/organisations			ES I; $\alpha=.86$ ES III; $\alpha=.88$
	Level of resources-assets possessed by groups/organisations	Significant power for decision making Solid financial basis or other resources Broad social connections Great social influence Skills and knowledge pools		ES I; $\alpha=.65$ ES III; $\alpha=.87$
<b>ES III</b>	<b>Human Capital</b>			
	<b>Skills from education</b>	Management Marketing Financial Legal	(1)=no skill, to (5)=advanced skill	ES III; $\alpha=.74$
	Please rate your level in the six following skills, gained through education:			

	<b>Skills from experience</b> Please rate your level in the six following skills, gained through working experience:	Technical IT		ES III; $\alpha=.72$
<b>ES III</b>	<b>Financial Capital</b> Please indicate your annual household income (1 Euro = £0.90):		(1)=Less than £10,000 (2)=£10,000 to £19,999 (3)=£20,000 to £29,999 (4)=£30,000 to £39,999 (5)=£40,000 to £49,999 (6)=£50,000 to £59,999 (7)=£60,000 or more	
	<b>TPB (van Hooft and de Jong, 2009)</b> Please rate your level of disagreement/agreement with the following statement:			
<b>ES II ES III</b>	<b>Personal Attitudes</b>	It is wise for me to engage in investment activities. It is useful for me to engage in investment activities. I think it is interesting to engage in investment activities.	(1)=strongly disagree, to (5)=strongly agree	ES II; $\alpha=.93$ ES III; $\alpha=.90$
<b>ES II ES III</b>	<b>Subjective Norms</b>	The person most important to me thinks that I should engage in investment activities. Most people who are important to me think that I should engage in investment activities.		ES II; $\alpha=.87$ ( $r=.78$ ) ES III; $\alpha=.85$ ( $r=.74$ )

<p><b>ES II</b> <b>ES</b> <b>III</b></p>	<p><b>Perceived Behavioural Control</b></p>	<p>Overall I feel confident about being able to engage in investment activities. I can overcome any obstacles or problems that could prevent me from engaging in investment activities. Engaging in investment activities is within my personal control. Engaging in investment activities is easy. I think that I possess the abilities that are needed to be able to engage in investment activities.</p>	<p>ES II; <math>\alpha=.80</math> ES III; <math>\alpha=.86</math></p>	
<p><b>ES I</b></p>	<p><b>Investment Intentions</b></p>	<p>I intend to engage in investment activities within the next three</p>	<p>(1)=strongly disagree, to (5)=strongly agree</p>	<p>ES I; <math>\alpha=.69</math> (<math>r=.52</math>)</p>
		<p>How much time do you intend to spend on investment activities during the next three months?</p>	<p>(1)=no time at all, to (5)=very much time</p>	
<p><b>ES II</b> <b>ES</b> <b>III</b></p>	<p><b>Investment Intentions</b></p>	<p>I intend to engage in investment activities within the next three months. I expect that I will engage in investment activities in the next three months.</p>	<p>(1)=strongly disagree, to (5)=strongly agree</p>	<p>ES II; <math>\alpha=.85</math> ES III; <math>\alpha=.83</math></p>
		<p>How much time do you intend to spend on investment activities during the next three months?</p>	<p>(1)=no time at all, to (5)=very much time</p>	

The accuracy of the questionnaires used in this thesis is assured via specific translation procedures. Particularly, empirical study I and II involve individuals with a Greek nationality and residence while the questionnaires are based on questions written in English. This implies that there was an urgent need to translate the English version (source questionnaire) into a Greek version (target questionnaire) so that potential participants can accurately understand the questions asked and precisely provide the answers that best suit their personal perspective (Cha *et al.*, 2007). Considering that i) the lexical meaning that reflects the precise meaning of individual words, ii) the idiomatic meaning in terms of the meanings of a group of words that are natural to a native speaker and not deducible from those of the individual words, iii) the experimental meaning that considers the equivalence of meanings of words and sentences for individuals in their everyday experience and iv) grammar and syntax that relates to the correct use of language (including ordering of words and phrases to create well-formed sentences) play a core role in the successful translation process of a questionnaire, it is necessary to adopt specific translating techniques that may help towards this direction (Usunier, 1998). Table 5 presents the diverse translation techniques that can be used along with a brief description and provides their core strengths and weaknesses. Despite the fact that this is a very time consuming process not only in terms finding more than one translator but also in terms of time constraints, this thesis uses back translation and monolingual and bilingual tests as the initial intention of the researcher was to guarantee the questionnaires' accuracy in a different language (Maneesriwongul and Dixon, 2004). Moreover, the researcher went a step further by adopting a collaborative approach where a team of translators was involved in establishing the equivalence stage, the parallel/double translation stage and revision stage (Douglas and Craig, 2007).

**Table 3.5 Translation techniques (Maneesriwongul and Dixon, 2004)**

<b>Technique</b>	<b>Description</b>	<b>Strengths</b>	<b>Weaknesses</b>
Forward-only translation	Instrument used was translated from the source language (SL) into the target language (TL) without using back-translation technique.	Applicable when only one translator is available. Time and cost saving.	Equivalences between SL version and TL version is not verified.
Forward translation with testing	Forward-only translation plus a pre-test of the TL version.	Applicable when only one translator is available. Time and cost saving. TL version can be tested for appropriate use in TL (monolingual) subjects.	Equivalences between SL version and TL version is not verified.
Back translation	Instrument used was translated from the source language into the target language by a translator. Then the target language version was translated back into the source language by other translators. Then, the 2 source language versions were compared.	Semantic equivalence between SL version and TL version can be verified. Direct comparison of 2 source language versions provides additional evidence of quality.	Not possible when only one translator is available. Time and cost commitment. Discrepancies between SL & TL responses are not detected.
Back translation and monolingual test	Back translation plus test of the target language version among monolingual (target language) subjects.	Semantic equivalence between SL version and TL version can be verified. Reliability and/or validity test of TL version is conducted among monolingual subjects. TL version can be tested for appropriate use in TL (monolingual) subjects.	Not possible when only one translator is available. Time and cost commitment. Discrepancies between SL & TL responses are not detected.

<b>Technique</b>	<b>Description</b>	<b>Strengths</b>	<b>Weaknesses</b>
Back translation and bilingual test	Back translation plus test of the source and target language versions among bilingual subjects.	Semantic equivalence between SL version and TL version can be verified. Reliability and/or validity test of both SL and TL versions is conducted among bilingual subjects. Discrepancies between SL & TL responses are detected.	Not possible when only one translator is available. Time and cost commitment. TL version cannot be tested for appropriate use in TL (monolingual) subjects. Difficult to find enough bilingual subjects.
Back translation and monolingual and bilingual tests	Back translation plus test of the target language version among monolingual (target language) subjects, and test of the source and target language versions among bilingual subjects.	Semantic equivalence between SL version and TL version can be verified. Reliability and/or validity test of SL & TL version can be conducted among both mono and bilingual subjects. TL version can be tested for appropriate use in TL (monolingual) subjects. Discrepancies between SL & TL responses are detected.	Not possible when only one translator available. Time and cost commitment. Difficult to find enough bilingual subjects.

In order to ensure the validity of the questionnaires used in this thesis, pilot testing processes are followed. A pilot test represents a small-scale study to test the questionnaire that is going to be used and therefore minimise the likelihood of respondents having problems in answering the questions and allow for some initial assessment of the questions' validity and reliability (Saunders *et al.*, 2015). Seven specific aspects were evaluated, namely the length of the questionnaire, the clarity of instructions, the existence of unclear or ambiguous questions, the existence of major topic omissions, the existence of a clear and attractive layout and other comments that the respondent may want to include and are not considered relevant to the aforementioned themes (Bell, 2005). Ten participants in each empirical study took part in the pilot test, but the only suggested changes were related to the time required for filling it in. The researcher adopted changes in the cover letter so as to include the exact completion time indicated by the respondents in the pilot testing (please see Appendix). The questions, constructs and variables showed a good validity and reliability and therefore no changes were required.

### ***3.3.3 Sample technique and characteristics***

Sampling techniques provide a range of methods that enable researchers to reduce the amount of data that needs to be collected by considering only data from a specific group of cases or elements (Saunders *et al.*, 2009). In non-probability sampling the units of the sample are selected on the basis of personal judgment or convenience and therefore the probability of any particular member of the population being chosen is unknown (Zikmund *et al.*, 2012). In this category, the researcher may choose among a quota sampling technique that selects a certain number or quota of cases on the basis of matching a number of criteria (Matthews and Ross, 2010), a purposive or in other words judgemental sampling technique, which is based on the researcher's judgment regarding the sample that will best answer the research questions and meet the research objectives (Saunders *et al.*, 2015), a snowball sampling technique, which is used for populations that can be hard to find and study because the population contains very few members or the population is stigmatised or the population has something to hide or the population consists of members of an elite group that may not care to participate in the research process (Bernard, 2012), and a convenience sampling technique, where the sample is



based on the fact that the researcher had access to the specific population (Maylor and Blackmon, 2005).

When it comes to probability sampling, samples are based on statistical theory and can be highly representative of the population or the potential cases (Matthews and Ross, 2010). Researchers may use diverse techniques that fall into the probability sampling approach, such as the simple random sample technique, which assigns each element of the target population an equal probability of being selected (Hair *et al.*, 2011), the systematic random sampling technique, where the sample is selected at regular intervals from the sampling frame (Saunders *et al.*, 2012), the stratified random sample technique, which divides the population into homogenous sub-groups called strata and then takes a simple random sample in each sub-group (Trochim and Donnelly, 2008), and the cluster random sampling technique, where the population is divided into clusters and a sample of clusters is drawn (Blair *et al.*, 2013).

Considering that this thesis concerns specific relationships and their existence between and among the study variables in the investment context and that all empirical studies at some level concern the generalisation of the findings, a random sampling technique is used for specifying the final sample from which data can be collected (Trochim and Donnelly, 2008). The sample frames were determined based on the Greek and English nationality and residence. Particularly, in order to meet the overall objectives of each empirical study, this thesis is examining the applicability of specific conceptual models and theories in two main national contexts within the European Union as discussed below.

Firstly, the assessment of how the environmental factors such as the financial crisis may interact with background and psychological factors in determining entrepreneurial intentions (Empirical Study I) was based on the examination of the Entrepreneurial Intentionality Model, Motivation Theory and Push Factors Theory among individuals with a Greek nationality and residence. Greece was mainly chosen because it is one of the countries that has felt the implications of the financial crisis more deeply.

Secondly, the identification of the reasons why and the conditions under which the TPB psychological constructs relate and interact (Empirical Study II) was examined in a Greek sample. The main reason for choosing Greece as the country sample was that individuals who live in a turbulent economic environment may base their decision to

engage in entrepreneurial activities on specific psychological processes that under different economic conditions may not have been the same.

Finally, in establishing whether background factors influence entrepreneurial intentions indirectly via psychological constructs and whether the relationships differ between cultural backgrounds (Empirical Study III) the Entrepreneurial Intentionality Model and the TPB have been tested in a Greek and English sample group with individuals living in England. The two national groups are the main examples of contrasting cultures within a multicultural environment, such as the one that England has, where individuals may act and respond to opportunities either in a collectivistic or individualistic manner. In this study the focus was turned on young individuals only, because for this group the availability of various forms of capital and not only financial capital seems more relevant.

Moreover, the empirical studies of this thesis include only participants with no previous investment experience in the past or by the time that the empirical studies were conducted for three main reasons. Firstly, data can be free from retrospective bias. Secondly, past investment experience could obfuscate the results of this study, which focuses on future investment intentions. Finally, a sample of experienced investors would suggest that investment intention would refer to participants' intentions to continue investing, which is beyond the scope of this thesis.

At the beginning of each survey, participants were asked whether they had ever invested and/or were still investing their human, social and financial capital in exchange for a stake in a project or a share of the project's revenues. It was clarified that the project could be a new business venture, but it could also be other types of projects that they "truly believed in" (please see the "eligibility of participation in the survey" section in Appendix A, B and C). Those who replied positively to this question were automatically discarded from the empirical studies. This made it possible to concentrate only on those who had never been engaged in investment activities.

It is not feasible to indicate the actual response rate as it was not exclusively mail accounts but also the web accounts that were used for the distribution of questionnaires in this thesis. This is one of the disadvantages when using websites and social media for questionnaire distribution but it is balanced by the benefit of quick and high responses that this strategy offers (Dillman, 2000). The final sample size and characteristics of

each empirical study are presented in Table 2. A more detailed sample characteristics description is provided in the methodological approach sub-section of each empirical study (please see sub-section 4.3.1, 5.3.1 and 6.3.1).

Concerning the final sample characteristics this thesis takes into consideration external validity. External validity refers to the extent to which the research findings can be generalised to particular individuals, settings and times, as well as across types of individuals, settings and times (Ghauri and Gronhaug, 2010). In order to ensure external validity, the researcher has created a sampling model, in other words a model for generalising (Trochim and Donnelly, 2008). Considering this thesis is concerned with alternative investments that do not typically fall into the venture capitalists or business angels categorisation, it was very difficult to find information regarding the population's characteristics. However, what is argued is that investors as conceptualised in this thesis can be individuals of any age, gender, educational level or employment status categorisation. Given that the empirical studies of this thesis are based on a cross-cultural differentiation between Greek and English populations, the research provides some compatibility between the sample characteristics of this thesis and sample characteristics of the investigated populations.

Therefore, information from the Greek and English census is used in order to compare the population characteristics with the sample characteristics of this thesis. The final sample characteristics for empirical study I and empirical study II are rather compatible with the Greek population in terms of gender (fifty one percent are females; ELSTAT, 2001; ELSTAT, 2014a), education (on average fifty four percent have attained at least an upper secondary education while thirty seven percent hold a tertiary degree; OECD, 2011b; EUROSTAT, 2013) and employment status (despite the recent economic recession, eighty four percent of the labour force are employed; EUROSTAT, 2014; ELSTAT, 2014b).

Information regarding the two nationalities living in England is not available. Nevertheless, the sample characteristics of empirical study III have been compared and are compatible with residents in England regardless of their nationality. Particularly, the sample is compatible in terms of gender, as 49 percent are males while 51 percent are females in England (ONS, 2011b) and employment status, as England has a 6.5 percent unemployment rate (ONS, 2011c).

**Table 3.6 Sample size and characteristics**

	National Context	Sample Size	Sample Characteristics					
			Age	Gender	Employment Status	Educational Level	Marital Status	
<b>Empirical Study I</b>	Greece	162 individuals with a Greek nationality and residence	31.5 years old on average	62 men 100 women	102 employed 60 unemployed	125 with a university degree	113 single 44 married/cohabiting 5 other	
<b>Empirical Study II</b>	Greece	203 individuals with a Greek nationality and residence	33 years old on average	78 men 125 women	144 employed 59 unemployed	160 with a university degree	138 single 61 married/cohabiting 4 other	
<b>Empirical Study III</b>	Greece	194 young individuals living in	Total sample	28 years old on average	72 men 122 women	89 employed 105 unemployed	148 with a university degree	172 single 18 married/cohabiting 4 other
	England	England: 97 with a Greek and	Greek sample	30 years old on average	34 men 63 women	52 employed 45 unemployed	79 with a university degree	94 single 2 married/cohabiting 1 other
		97 with an English nationality	English sample	26 years old on average	36 men 61 women	37 employed 60 unemployed	68 with a university degree	78 single 16 married/cohabiting 3 other

### **3.4 Data analysis**

The term statistics refers to a set of mathematical procedures of organising, summarising and interpreting information (Gravetter and Wallnau, 2011). Statistical techniques can be categorised into i) descriptive statistics, where the purpose is to organise and summarise observations, and ii) inferential statistics, where the purpose is to draw conclusions about conditions that exist in a population from the study of a sample (King and Minium, 2003). Another core categorisation identifies univariate statistical analysis, which involves one variable, bivariate statistical analysis, which involves two variables and looks at the association between these two variables (one dependent and one independent), multivariate statistical analysis, which involves three or more variables or sets of variables simultaneously (Bernard, 2012; Zikmund *et al.*, 2012). According to Bryman and Bell (2007) multivariate analysis can be useful for establishing whether a third variable intervenes and affects the relationship between the two variables (one dependent and more than one independent). In this thesis, both descriptive and inferential analyses have been implemented in each empirical study. Particularly, descriptive univariate statistics have been used in order to calculate frequencies/percentages, means, standard deviation and z-scores. Furthermore, validity/reliability tests have been performed and total scores for scale construction have been calculated. Bivariate and multivariate statistics have been used in order to examine the association between and among the study variables (correlation and regression). In order to implement statistical techniques researchers make use of diverse statistical software packages. The data analysis in this thesis has been implemented by using the SPSS IBM 20 version for three core reasons: the software allows both for descriptive and inferential statistical techniques implementation but also for upgraded analysis by using syntax procedures while simultaneously being user-friendly.

#### **3.4.1 Validity, reliability and total scores**

The essential tests that need to be reported in relation to the quality of the scales used in an analysis is their validity and reliability (Chandler and Lyon, 2001). Therefore, one aspect of this thesis was to ensure the stability of the measurements (Ghauri and Gronhaug, 2010). Considering that research findings are reliable if the world itself is uniform (Maylor and Blackmon, 2005), the implementation of reliability tests is crucial

in terms of indicating whether an instrument can be interpreted consistently across different situations (Field, 2009). Coefficient  $\alpha$  is the most commonly applied estimate of a multi-item scale's reliability and it represents the average of all possible split-half reliabilities for a construct (Zikmund *et al.*, 2012). Therefore, the internal consistency or average correlation of items in the survey instruments to gauge their reliability was determined by Cronbach's alpha (Cronbach, 1951). Nunnally and Bernstein (1994) point out that the usual threshold level is .70 and above for newly developed measures, while for already developed measures .60 to .69 is considered to be an acceptable reliability level, .70 to .79 is a good reliability level, .80 to .89 is considered a very good reliability level and finally .90 and above is an excellent reliability level. In cases where the scale is based on two items it is essential to report the inter-item correlation ( $r$ ), which is a subtype of internal consistency reliability, by determining the correlation coefficient for each pair of items (Cozby, 2001).

Another core aspect of this thesis was to ensure the measurement validity of the scales used. Measurement validity refers to how accurately the researchers have conducted their research (Maylor and Blackmon, 2005) and is considered as the best available approximation of the truth of a given proposition, inference or conclusion (Trochim and Donnelly, 2008). Construct validity is one of the approaches that a researcher may take in order to assess measurement. Particularly, construct validity relates to what the construct or concept or scale is in fact measuring and is assessed via convergent validity, representing the extent to which the construct is positively correlated with other measurements of the same construct or divergent/discriminate validity corresponding to the extent to which the construct does not correlate with other measures that are different from it (Hair *et al.*, 2011).

One of the threats to measurement/construct validity is common method bias related to common method variance (CMV; Podsakoff *et al.*, 2003). Common method variance is defined as a systematic error variance shared among variables measured with and introduced as a function of the same method and/or source (Richardson *et al.*, 2009). Considering that this thesis is based on three cross-section research studies which measure the study variables by using self-reported questionnaires it is reasonable to check for common method bias in each empirical study if the correlation coefficients between the predictor and criterion variables are alarmingly high (above .70; empirical

study II and III) (Lindell and Whitney, 2001; Podsakoff *et al.*, 2003). In order to provide construct validity evidence and control for common method bias, scholars have identified diverse techniques (Brannick *et al.*, in press).

In this thesis, common method bias is examined by using Confirmatory Factor Analysis (CFA) to show that only specific items (observed variables) load significantly on each of the study variables (unobserved/latent variables) (Lance *et al.*, 2010). The CFA was performed by choosing dimension reduction and particularly the Principal Axis Factoring (PAF) instead of the Principal Component Factoring (PCF) approach was preferred due to the fact that the former takes account of co-variation whereas the later accounts for total variance (Kim and Mueller, 1978). In order to assess whether factor analysis was appropriate for the data in this thesis, two criteria are used: the Kaiser-Meyer-Olkin (KMO) statistics should fall into the acceptable range ( $0.8 < \text{KMO} < .09$ ) and the Barlett's test of Sphericity should be highly significant ( $p < .001$ ) (Field, 2009). Once this is assured, the factor analysis should result in the expected number of distinct factors, where each item loading above .40 loads to the expected factor while none of the extracted factors should explain the majority of the total variance (Field, 2009).

The Principal Axis Factoring approach has also been used in the construction of the final variables that have been used to the analysis that determines the hypothesised effects. The final constructs used in this thesis are either based on multi-items (investment intentions) or multiple sub-scales (e.g. bridging social capital) and therefore they have been determined by calculating a total score based on the mean value of the items and a total score based on the mean value of the sub-scales respectively. Cronbach's  $\alpha$ , inter-item correlation (if applicable) and PAF analysis results (if applicable) for the constructs used in each empirical study are presented in detail in the following three empirical study sections (chapter 4 - 5 - 6).

#### **4.4.2 Frequencies/percentages, mean, standard deviation, z-scores**

The researcher used measures of frequency/percentage, measures of location/central tendency, measures of variability and measures of relative location, while in inferential statistics measures of association between/among variables are used (Anderson *et al.*, 2008). Measures of frequency/percentage include frequency distribution, which is as a set of data organised by summarising the number of times a particular value of a

variable occurs, and percentage distribution, which summarises the percentage values associated with particular values of a variable (Zikmund *et al.*, 2012). Measures of location/central tendency include, among others, the mean, which represents the statistical average calculated by totalling all the values and dividing by the number of cases (Matthews and Ross, 2010). Measures of variability consist of the determination of the standard deviation(s), which is defined to be the positive square root of the variability that utilised all the data (variance) (Anderson *et al.*, 2008). Measures of relative location, which include the calculations of standard scores which have a fixed mean/standard deviation, and particularly a z-scored type standard score, state how far away a score is from the mean in standard deviation units (King and Minium, 2003). Every value in a distribution is transformed into a corresponding z-score, where the distribution of z-scores (standardised distribution) always has a mean of zero and a standard deviation of 1 (Gravetter and Wallnau, 2011). Independent non-categorical variables in each empirical study were standardised prior to examining the direct, indirect and interaction effects.

### ***3.4.3 Measures of association between two or more variables***

For an initial measurement of the degree of the relationship between the study variables, the researcher ran a bivariate correlation statistical test in order to assess the relationships between all pairs of variables in each empirical study (Gravetter and Wallnau, 2011). In the correlations test the coefficient of correlation represents a mathematical expression of the degree of association between the two variables (King and Minium, 2003). Particularly, the Pearson's product moment coefficient of correlation ( $r$ ) has been used because it is suitable for continuously scaled variables that represent the core variables studied in this thesis, which are included in the hypotheses (Martin and Bridgmon, 2012). Despite the fact that the better the correlation between the variables, in other words the higher the correlation coefficient, the better the prediction, the accountability of the prediction error, in other words the improvement of the predictions, requires a more upgraded analysis than the correlation one (King and Minium, 2003). Therefore, hypotheses in this thesis were examined by means of regression analysis in order to assess the extent to which the predictor variable (independent variable) predicts a criterion variable (dependent variable) in each



empirical study (Martin and Bridgmon, 2012). Particularly a multiple regression analysis, which is an extension of the simple linear regression analysis, is used in order to allow for a metric dependent variable to be predicted by multiple independent variables simultaneously (Zikmund *et al.*, 2012). Furthermore, the use of hierarchical regression analysis in terms of determining mediating and moderating effects was crucial in testing the hypothesised effects (Gelman and Hill, 2007). In the hierarchical regressions the predictors and/or mediators and/or moderators are entered in a specific order in order to evaluate and explain the possible variance in regression coefficients (Cohen *et al.*, 2002). The standardised regression (beta) coefficient is indicated by how many units the dependent variable will change, given a one-unit change in the independent variables (Argyrous, 2011).

In order to determine whether the variables are related to each other, specific criteria/rules need to be examined. The significance of the relationship is related to the statistical significance, reflecting a statement about the likelihood of the observed result (Matthews and Ross, 2010). Specifically, the significance is indicated by the *p*-values. A *p* value which is greater than .05 designates a non-significant relationship while a *p* value lower than .05, .01 and .001 indicates a significant relationship at the .05, .01 and .001 level accordingly (Maylor and Blackmon, 2005; Burns, 2008). The direction of the relationship is indicated by the positive or negative association coefficients values, where the former indicates that variables move in the same direction while the latter indicates that variables move in the opposite direction (Argyrous, 2011).

The value of the coefficient ranges from -1 to 1 (Martin and Bridgmon, 2012). A positive coefficient implies that a high/low value of the independent variable results in a high/low value of the dependent, while a negative coefficient indicates that a high/low value of the independent variable results in a low/high value of the dependent (Jupp, 2006). When it comes to the strength of the relationship -1 and 1 coefficient values indicate a very strong relationship, -0.7 to -0.9 and -0.7 to -0.9 indicate a strong relationship, , -0.4 to -0.6 and -0.4 to -0.6 indicate a moderate relationship, -0.1 to -0.3 and -0.1 to -0.3 indicate a weak relationship (Gravetter and Wallnau, 2011). A zero coefficient represents no relationship (King and Minium, 2003). The above criteria have been used in order to accept/reject the hypotheses of this thesis. The table below provides an overview of the regression analyses that have been used in order to test the

hypothesised effects of this thesis. Moderation and mediation analyses are discussed in the following sub-section.

**Table 3.7 Data Analysis Approaches**

	<b>Research Analysis Approaches</b>
<b>Empirical Study I</b>	Hierarchical regression analysis 2-way moderation (Preacher’s slope test)
<b>Empirical Study II</b>	Hierarchical regression analysis Parallel mediation (Hayes syntax) 2-way moderation (Preacher’s slope test) 3-way moderation (Preacher’s slope test)
<b>Empirical Study III</b>	Regression analysis Parallel mediation (Hayes syntax) Serial mediation (Hayes syntax)

**3.4.4 Two-way and three-way moderation**

A moderator variable (Z or W) predicts “when” and “how” the relationship between a predictor (independent variable X) and an outcome (dependent variable Y) is different in terms of direction and/or strength while the moderator effect is represented by an interaction whereby the effect of one variable depends on the level of another (Baron and Kenny, 1986; Frazier *et al.*, 2004; Marsh *et al.*, 2013). In this regard, the moderator may strengthen (enhancing interaction) or weaken (buffering interaction) the effect of the predictor on the outcome but the direction remains the same or the predictor and moderator have the same effect (antagonistic interactions) on the outcome but the interaction is in the opposite direction (McClelland and Judd, 1993a; Cohen *et al.*, 2003). The main reason for the inclusion and examination of interaction effects in this thesis is that the identification of important moderators between predictors and outcomes indicates the maturity and sophistication of a research inquiry (Aguinis *et al.*, 2001).

The fact that empirical study I and II explore the interaction effects between two variables (financial crisis and capital, financial crisis and motives, attitude and norms, attitude and control, norms and control) while empirical study II goes a step further and investigates interaction effects among three variables (attitudes, norms, control) indicates that the examination of a two-way and three-way moderation is essential in testing the hypothesised effects. Particularly, this thesis tests a) two-way interactions

statistically by regressing the dependent variable Y on the independent variable X, the moderator variable Z, and the product (interaction) term of X and Z (XZ, in a separate step) and b) three-way interactions by testing the effect of X on Y depending on two moderator variables (Z and W) where Y is regressed on the variables X, Z, and W, the products of each pair of variables (XZ, XW, and WZ, entered in a separate step) and the product term of all three predictor variables (XWZ, entered in a separate step) (Dawson and Richter, 2006).

A significant ( $p < .05$ ) two-way interaction term indicates that the effect of X on Y differs across the range of the moderator variable Z, while a significant three-way interaction term indicates that the relation between X and Y varies across levels of Z, W, and/or the combination of Z and W (Cohen *et al.*, 2003; Dawson and Richter, 2006). Significant interactions were probed with the simple effects approach (Preacher *et al.*, 2006), and were plotted by using one standard deviation above and one below the mean of the predictor and moderator variables. Plots for a visual indication of the interaction effects are used by providing the relation between X and Y, at high/positive and low/negative values of Z (two-way interactions) or Z and W (three-way interactions) (Jaccard and Turrisi, 2003). Plots and significant slopes were determined based on online resources (<http://www.quantpsy.org>) designed to facilitate the probing of two-way and three-way interactions in multiple and hierarchical linear regression (Preacher *et al.*, 2006).

### **3.4.5 Parallel and serial mediation**

Mediators are variables that explain, in terms of how and why, the relationship between a predictor (independent variable) and an outcome (dependent variable) and offer an understanding of the mechanisms through which a predictor may influence an outcome (James and Brett, 1984; Baron and Kenny, 1986). From a graphical perspective, mediation refers to an indirect effect of an independent variable on a dependent variable that passes through a mediator variable (Shrout and Bolger, 2002). The main reason for the inclusion and examination of mediating effects in this thesis is the importance of examining such effects as a sign of a maturing discipline when, after direct relations have been demonstrated, researchers turned to explanation and theory testing regarding those relations (Hoyle and Kenny, 1999). The required conditions for mediation are

examined based on Baron and Kenny's (1986) propositions: (a) the predictor should relate to the mediator; (b) the mediator(s) should relate to the outcome; and (c) the predictor outcome relationship becomes non-significant, or significantly weaker after the inclusion of the mediator(s) in the equation. A demonstration of full mediation implies that an underlying process can completely account for the independent-dependent relationship, whereas a demonstration of partial mediation implies that it cannot (Rucker *et al.*, 2011). The significance of the mediating effect is determined by the Sobel test (Preacher and Leonardelli, 2001; Preacher and Hayes, 2004).

Despite the fact that the aforementioned statistical process provides results regarding the mediating effect (simple mediation) it does not accurately account for parallel mediation where two or more variables serve as equivalent mediators or serial mediation, where mediator variables form sequential or serial chains (Hayes, 2009; Zhao *et al.*, 2010b). Considering that some of the hypotheses in empirical study II and II are related to parallel and serial mediating effects and taking into account that a superior analysis would provide more complete and valid results, Hayes syntax (Hayes, 2013) has been used in order to examine the proposed hypothesised effects. Particularly, the multiple mediation syntax INDIRECT, MEDIATE and MED3C were used (Hayes, 2013). All three macros are freely available (Hayes, 2010a; Hayes, 2010b; Hayes, 2010c). INDIRECT analysis/syntax estimates the path coefficients in a multiple mediator model and generates bootstrap confidence intervals (percentile, bias-corrected, and bias-corrected and accelerated) for total and specific indirect effects through one or more mediator variable (Preacher and Hayes, 2008a). MEDIATE analysis/syntax facilitates the estimation of mediation models with multi-categorical independent variables (Hayes and Preacher, 2014). MED3C estimates the total, direct, and indirect effects with the inclusion of at least one covariate for serial mediation (Hayes *et al.*, 2010). In all cases, bootstrap confidence intervals for indirect effects are generated. Significant indirect effects are determined when 95% confidence intervals do not contain zero values (Preacher and Hayes, 2008b).

### **3.5 Ethical considerations**

The use of surveys in this thesis in order to investigate the hypothesised effects indicates that human intervention was vital for the successful completion of this

research. When it comes to human intervention and ethical considerations Schlenker and Forsyth (1977) argue that three philosophical approaches and schools of thoughts relate to ethics: a) teleology, which involves the balancing of the costs and benefits associated with an action as a means of developing general ethical rules, b) deontology, which involves the rational adherence to rigid, universal rules that hold irrespective of the situation or consequences and c) scepticism, which involves denying the ability to apply universal rules and asserting the individuality of moral codes.

The philosophical stance of the researcher regarding research ethics is in line with the deontological approach for the reason that she considers that participants should not be harmed in any way no matter what the potential research benefit may be (Skinner *et al.*, 1988). The participants in this research were treated as “ends and never purely as means”. Every practice that has been undertaken in terms of collecting, analysing and presenting information from individuals was based on ethical principles that ensured that the process did not harm or put the participants at risk (Beauchamp and Bowie, 2004). Given that this thesis is embedded in more general social and psychological research, the researcher has carefully considered the ethical code and principles of the British Sociological Association and Psychological Society related to anonymity, confidentiality and autonomy (BSA, 2004; BPS, 2010).

Anonymity requires that even the researcher does not know who the participants are (Polonsky, 1998). In other words, it means that the researcher does not name the individual involved but it is usually extended to mean that the researcher does not include information about any individual that will enable that individual to be identified by others (Walford, 2005). Confidentiality, on the other hand, means that the researcher may know who the participants are but they will not be identified in any way in the resulting report (Polonsky, 1998). Confidential information is information that is private or secret and should not be passed on to others (Walford, 2005; Wiles *et al.*, 2008).

Therefore, in this thesis the researcher has regard to her obligations under the Data Protection Acts and Freedom of Information Act, where a) threats to the confidentiality and anonymity of research data have been anticipated by the researcher by keeping the records of those participating in the research confidential and b) methods for preserving anonymity, such as the removal of identifiers or the use of pseudonyms, have been used in order to break the link between data and identifiable individuals (BSA, 2004).

Finally, autonomy means that participants have the opportunity to participate voluntarily and have the opportunity to withdraw from the study at any point (Polonsky, 1998; Punch, 2013). The researcher a) respected the knowledge, insight, experience, expertise, individual-cultural-role differences (age, sex, disability, education, ethnicity, gender, language, national origin, religion, sexual orientation, marital or family situation and socio-economic status) of the participants, b) was willing to explain the nature of the research to which participants were being asked to contribute, and to avoid any unfair, prejudiced or discriminatory practice and c) was keen to accept that individuals may choose not to be involved in the research (BPS, 2010).

In order to ensure the above, the introduction part in the questionnaires used in this thesis offered a clear statement with detailed information regarding the aspects related to anonymity, confidentiality and autonomy (please see introductory statement in Appendix A, B and C). Participants were informed from the beginning of the survey about the aim/objectives of the research, the type of data to be collected, the method of collecting data, the confidentiality and anonymity conditions, the time commitment expected from participants, the right to decline to offer any particular information requested by the researcher, the opportunity to withdraw from the study at any time, the name and contact details of the investigator (BPS, 2010).

### **3.6 Chapter summary**

This chapter has highlighted the main methodological approaches of this thesis and provided clear justifications regarding the main reasons that explain the methodological decisions of the researcher related to the empirical studies. Particularly, the empirical studies are a) influenced by the researcher's positivist philosophical approach, b) based on a deductive approach where quantitative research methods are implemented, c) related to data collected through cross-section surveys that use online questionnaires that are constructed by adopting validated scales from previous research and distributed to a random sample of English and Greek individuals and d) linked to results from moderated and mediated regression analyses by using SPSS software, Hayes syntax and Preacher's online slope analysis. The following chapter will reflect on the initial empirical study, which relates to the investigation of the moderating role of the financial crisis on the relationship between capital/motives and investment intentions. The

hypothesised effects are examined in a turbulent economic situation such as the one that Greece has been facing for the past seven years.

## **Chapter 4: Empirical Study I - Capital, motives and their link to investment intentions: The moderating role of the financial crisis**

### **4.1 Introduction**

The current financial crisis has been a very deep one, not just in terms of its economic impact, but also in terms of the effects it has had on social structures and coherence. The economic crisis has resulted in losses of wealth, income and jobs and led to disruptions in life plans and high levels of uncertainty (Leiser and Rötheli, 2010). Beyond the issues of financial regulation, the emergence of the financial crisis sparked discussions about the systemic problems many states had been facing for years, which naturally led to a debate as to how these should be addressed. Irrespective of the school of thought one subscribes to when it comes to how the crisis should be dealt with, everyone agrees that returning to growth is a non-trivial challenge. The insecure and turbulent business environment, the lack of investment and low consumer demand, typically in relation to high unemployment, has created a conundrum that deeply affects everyone.

Under such extreme conditions of financial scarcity, the relative value of human and social capital can increase due to the lack of liquidity that could have been potentially used to source human and social capital from the market. This is of importance as human and social capital can be a catalyst for new venture creation or growth. The investment of human and social capital can be investigated at different levels of analysis. At the individual level, it is possible to study intentions to invest diverse forms of capital, which eventually leads to entrepreneurial team and venture formation or growth (team level), which in turn could deliver a competitive advantage (organisational level). In this regard, the focus is turned on the individual level of analysis by studying how diverse forms of capital and motives form individuals' intentions to invest in new or existing ventures during times of adverse financial conditions.

### **4.2 Literature review**

Previous research produced mixed results regarding the influence of capital and motives on the formation of entrepreneurial intentions by using models that do not practically take into account severe external conditions such as the financial crisis (Scheinberg and



MacMillan, 1988; Evans and Jovanovic, 1989; Shane *et al.*, 1991; Birley and Westhead, 1994; Robinson and Sexton, 1994; Crant, 1996; Kolvereid, 1996a; Kolvereid, 1996b; Amit *et al.*, 2001; Autio *et al.*, 2001; Carter *et al.*, 2003; Davidsson and Honig, 2003; Arenius and Minniti, 2005; de Clercq and Arenius, 2006; Kim *et al.*, 2006; Kolvereid and Isaksen, 2006; Carr and Sequeira, 2007; Cassar, 2007; Liñán, 2008; Wu and Wu, 2008; Liñán and Chen, 2009; Kirkwood, 2009a; Drost, 2010; Fini *et al.*, 2010; Cetindamar *et al.*, 2011; Iakovleva *et al.*, 2011). Considering the role of the financial crisis is of great importance in the investment context as the linkage between the availability of capital and strength of motivation on investment intentions strongly depends on the environmental conditions that are determined by the financial crisis. This study adds value to previous research on the relationship between capital/motives and entrepreneurial intentions by testing the repeatedly supported theoretical assumptions in the investment context in conditions of financial crisis. Specifically, Bird's (1998) Entrepreneurial Intentionality model is extended by incorporating the role of motives and the moderating role of environmental conditions on the person-intention relationship.

The focus is turned on Greece, a country that found itself in the centre of the Eurozone sovereign debt crisis (Pagoulatos and Triantopoulos, 2009; Kouretas and Vlamis, 2010; Sakellariopoulos, 2010; Zahariadis, 2010). There are four reasons for Greece's special consideration in the context of this paper. Firstly, Greece was the first Eurozone country to seek financial support. Secondly, Greece felt the implications of the crisis far more deeply than any of the other countries (EUROSTAT, 2011). Thirdly, there is an abundance of highly educated and skilled young workers in Greece (ELSTAT, 2009). Finally, Greece has one of the highest proportions (12.8% in 2008) of its active workforce employed in public corporations among the OECD members (OECD, 2011a). This is indicative of an employment culture that has traditionally favoured secure public sector positions and not entrepreneurial seeking opportunities. Despite the fact that the percentage of the total population motivated to enter entrepreneurship due to necessity decreased in 2011, the majority of Greeks are inclined to necessity rather than to opportunity entrepreneurship (Bosma *et al.*, 2012). Fafaliou (2010) found in her research among Greek students that among diverse socio-demographic and environmental factors only the student's prior entrepreneurial and

leadership experience and the father's entrepreneurial background explained students' propensity to act. Previous research also indicates that risk propensity, prior experience in leadership, a lack of available time and space to perform work (Apergis and Fafaliou, 2014), as well as communication skills and participation in networks (Agapitou *et al.*, 2010), influence students' propensity to create a venture. However, the aforementioned studies do not shed light on the role of the financial crisis in the formation of entrepreneurial intentionality. Taking into consideration that the financial crisis is of particular importance, the majority of Greeks report that they would prefer to be self-employed and that this is not feasible mainly due to financial constraints and not because of lack of skills or ideas (Eurobarometer, 2010). This is the reason why the focus is not only turned on financial capital but also on the role of other antecedents in shaping investment intentions during times of crisis.

The term "investment" is used in the rest of this study to describe not exclusively individuals' intention to invest financial capital, but also human, social and other available tangible resources. The main research question is whether different forms of capital relate to an individual's intentions to engage in investment activities, and whether the effect of the financial crisis on individuals' income and work situations moderates these relationships. In an attempt to gain a more comprehensive picture, the role of certain motives (independence, innovation recognition, self-realisation, and gaining financial returns) in predicting individuals' investment intention is examined.

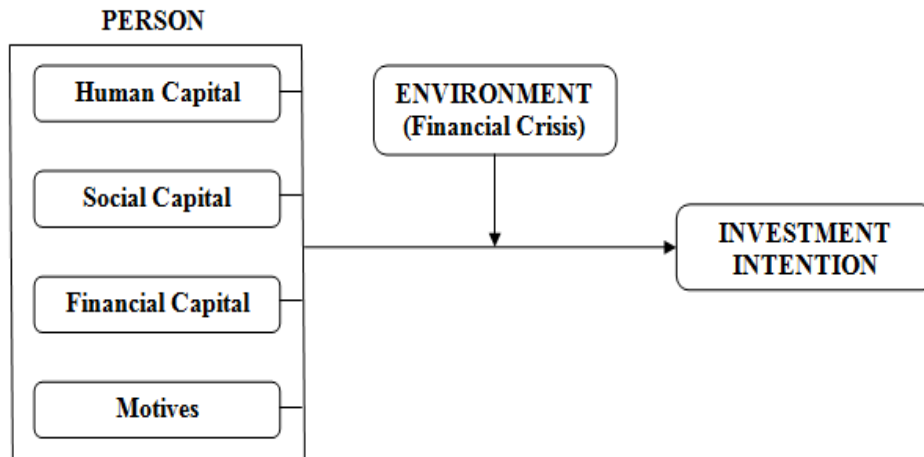
#### ***4.2.1 Theoretical model***

Engaging in entrepreneurial activities, such as investment activities, presupposes the possession of human, social and financial capital that can be directly invested in the venture. Certain levels of capital that individuals possess determine their personal profile and contribute to their decision to engage in investment activities. Furthermore, personal variables, in the form of traits or background factors, predispose individuals to entrepreneurial intentions (Bird, 1988). However, the decision to engage in entrepreneurial activities is mainly determined by individuals' motivation rather than specific personality traits (Epstein and O'Brien, 1985; Gartner, 1988; Shaver and Scott, 1991). In this regard, individuals form investment intentions as a consequence of their desire to fulfil specific personal needs as expressed in their personal motivation.

Conceptual models that exclude motives fail to capture the entrepreneurial process holistically (Herron and Sapienza, 1992). In addition, entrepreneurial intentions are also influenced by environmental factors related to social, political and economic variables (Bird, 1988; Shook *et al.*, 2003). The economic recession is considered to be a key environmental factor affecting entrepreneurial intentions (Mazzarol *et al.*, 1999). For these reasons, the present study investigates capital, motives and environmental conditions in the form of the financial crisis in an attempt to understand investment intentions.

The conceptual model is based on Bird's (1988) theoretical assumptions that personal and environmental variables are the main determinants of individuals' rational and intuitive thinking, which, in turn, determines intentions. In the investment context, personal characteristics that form intentions may concern individuals' availability of capital combined with motivation. As concerns the environmental conditions that may determine investment intention, the conceptual model proposes that the financial crisis may shape the conditions under which new ventures are created. In contrast to Bird, who focuses on the main effects of the person and the environment in forming intentions, it is proposed that the environment may function as a moderator in the person-intention relationship. Namely, financial crisis is viewed as a factor that determines the degree to which individuals' various types of capital and motives will lead to high investment intention. Notably, even the same individual may behave in a different way under different environmental circumstances (Gartner, 1989). Motivated individuals or individuals who possess diverse forms of capital may not be inclined towards entrepreneurial activities unless the environment favours taking such action. This implies that entrepreneurial intentions are formed based on the interaction between the person and the environment (Gartner, 1985; Greenberger and Sexton, 1988; Dubini, 1989; Learned, 1992). The effect of the availability of various forms of capital an individual may have and his/her motives (person) on investment intentions, and the moderating effect the financial crisis (environment) might have on an individual's income and work situation are explored. Figure 1 presents the theoretical model of this study.

**Figure 4.1 Conceptual model of investment intentions adapted from Bird (1988)**



#### ***4.2.2 Human, social and financial capital***

A venture is typically seen as a collection of resources (Wernerfelt, 1984; Barney, 1991; Barney *et al.*, 2001). Resources represent tangible assets, such as financial capital and access to financial capital, or intangible assets, such as capabilities (for example, management skills), information and knowledge, among others (Barney *et al.*, 2001; Runyan *et al.*, 2006). The combination of tangible and intangible resources adds value, increases revenue and produces a competitive advantage (Barney, 1991). Thus, ventures should combine unique forms of individuals' financial, human and social capital in order to gain value. In particular, the presence of diverse social and human skills and capabilities may be the key determinant of successfully launching or growing a venture (Kakati, 2003). Particularly for markets in which financial capital is scarce, the availability of human and social capital can pave the way as a viable route to market, as the alternative options (e.g. outsourcing or buying in skills) can be prohibitively expensive. In other words, an investment model that encompasses investment of not just financial capital, but also other forms of capital, can potentially lower entry or growth barriers for new or existing ventures and make opportunity exploitation and the pursuit of innovation feasible.

Entrepreneurs attempt to eliminate financial constraints by “*bootstrapping*” (Bhide, 1992) or making effective use of what is available to them. Although financial bootstrapping acknowledges the role that not owned or controlled resources play in the venture creation process (Harrison *et al.*, 2004), for the most part the focus is on

financial capital (Winborg and Landström, 2001). Baker and Nelson (2005) look beyond the financial capital by introducing the concept of “*bricolage*” and argue that ventures (especially when it comes to Small and Medium Enterprises, SMEs) may involve idiosyncratic combinations of heterogeneous resources that are at hand and can be applied to new problems and opportunities. Entrepreneurs act as bricoleurs by coming up with novel solutions to their resource constraints and operating with whatever resources are available (Edelman and Yli-Renko, 2010). Considering that bricolage is a response to resource scarcity, a wide variety of resources could be included and considered (Baker and Nelson, 2005). For instance, founders make use of a broad variety of resources including financing, suppliers, office space, advice and employees (Baker *et al.*, 2003). During a financial crisis, when financial resources are scarce and it is risky to invest, and when financial liquidity in the market is low, human and social capital become of relatively higher importance than typically, as they cannot be bought from the market and alternative methods of sourcing them are needed.

In knowledge-driven and information-intensive economies that revolve around services, human capital accounts for a significant proportion of a venture cost base; new venture creation or adding value to an existing venture may be facilitated by bringing skills and resources in-house and locking them in for a period of time (Papagiannidis and Li, 2005; Papagiannidis *et al.*, 2009). An individual’s human capital comprises skills and capabilities which have been developed through his or her previous education (explicit knowledge) and experience (tacit knowledge) (Piazza-Georgi, 2002; Rauch *et al.*, 2005). The value of an individual’s knowledge depends upon how useful and applicable such knowledge could be to a venture (Haynes, 2003). Following Becker’s (1993) distinction between general and specific knowledge, previous research indicates that value originates from the specific components of human capital which can be directly applied to the venture (Gimmon and Levie, 2010). In the preliminary stages, when an innovative idea is put into action, both business-related and technology-related issues come under consideration (Cooper, 1973). In this regard, not only do managerial, marketing, financial and technical skills become essential for the accomplishment of the process (Freel, 1999; Bouwman and Hulsink, 2002), but also other skills, for example, related to information technology and law.

Social capital is fundamentally different from human capital as the latter reflects the quality of individuals whereas social capital represents the quality between individuals (Burt, 1997). The quality between individuals is based on the quality of relationships, shared knowledge-understandings-beliefs, norms, rules, expectations and mutual trust (Coleman, 1988; Nahapiet and Ghoshal, 1998; Ostrom, 2000). Chou (2006) argues that social capital may exist within networks of individuals or households, within and among other entities, such as organisations and formal institutions. The relationships created through social interactions are based on strong and/or weak ties (Granovetter, 1973) connecting homogenous individuals, such as family, friends, neighbours (that is, bonding social capital) and/or heterogeneous individuals through social groups/organisations (that is, bridging social capital) (Patulny and Svendsen, 2007; Sabatini, 2009). These diverse connections that individuals bring to their regular activity are based on shared beliefs and particularised/generalised trust, and they generate a mutual willingness to offer help and allow individuals to extract benefits via their social networks (Fukuyama, 1995; Nahapiet and Ghoshal, 1998; Portes, 1998; Tsai and Ghoshal, 1998). Individuals within the networks are willing to share their personal social capital on certain terms, in order to exchange and combine tangible and intangible resources (Ulhøi, 2005).

By effectively reversing the flow of the bricolage process, it is hypothesised that individuals possessing human, social, financial capital, but also other tangible resources, such as technology, equipment, land, buildings, may be inclined to invest them as part of a new or existing venture. For example, if someone already has a piece of software that can be reused this may reduce a venture's entry or growth barriers, without posing any real cost to the investor. Resources that would have incurred a direct financial cost are of particular interest under financial crisis conditions, when cash is scarce. According to Katz and Gartner (1988) ventures emerge according to four properties: intentionality, resources, boundary and exchange. In their article it is not clear which one comes first and which one follows. When it comes to entrepreneurial activities such as investment activities, intentionality may come second as the possession of resources is a critical prerequisite that comes first. Based on the above analysis, the role of all sorts of available resources on investment intentions is explored and the following hypothesis is formulated:

**Hypothesis 1:** Human (a), social (b) and financial capital (c) relate positively to investment intention.

#### 4.2.3 Motives

Individuals are motivated to engage in entrepreneurial activities due to attractive and desirable outcomes or rewards gained through their involvement with the specific behaviour (Vroom, 1964; Gilad and Levine, 1986; Gatewood *et al.*, 2002). Intrinsic motives refer to the internal rewards that follow certain behaviour, such as independence and self-fulfilment (Segal *et al.*, 2005). Extrinsic motives refer to external rewards that follow certain behaviour, such as tangible objects (for example, money) and intangibles (for example, status, power, social acceptance) (Carsrud and Brännback, 2011). Shane, Locke and Collins (2003) claim that individuals with high levels of entrepreneurial motivation are more inclined towards following an entrepreneurial career path. The desired positive outcomes that individuals attain by engaging in entrepreneurial activities can also be seen as reasons for entering entrepreneurship (Edelman *et al.*, 2010). Reasons that individuals give regarding their engagement in a given behaviour represent mental states in which individuals form an intention to act (Malle, 1999). In this context, unmotivated individuals lack intentionality to act upon a given behaviour, while motivated individuals are likely to exert higher levels of intentions (Ryan and Deci, 2000a; Ryan and Deci, 2000b).

As intrinsic and extrinsic motives are not mutually exclusive, there is a combination of reasons leading to entrepreneurial activities (Walker and Webster, 2007; Carsrud and Brännback, 2011). Previous research has focused on a number of diverse reasons that individuals indicate as motives responsible for entering into entrepreneurship (see Scheinberg and MacMillan, 1988; Shane *et al.*, 1991; Birley and Westhead, 1994; Kolvereid, 1996a; Shaver *et al.*, 2001). Carter *et al.* (2003) categorise the diverse reasons given by individuals into broad fields. *Financial success* involves extrinsic motives that describe an individual's willingness to earn money and achieve financial security (Carter *et al.*, 2003). Previous research suggested that perceptions regarding financial benefits from entrepreneurship may influence individuals' occupational decisions (Gatewood *et al.*, 1995; Douglas and Shepherd, 2002). Individuals that seek financial advancement and consider that entrepreneurship may provide higher earnings

than paid-employment in the long run will be more inclined towards entrepreneurial activity. All things being equal, financial success is not considered as the initial motive leading to entrepreneurial activity (Amit *et al.*, 2001), as other motives may constitute a far stronger drive towards entrepreneurial intentions (Shane *et al.*, 1991). In this sense, entrepreneurial decisions may also be influenced by individuals' desire for *recognition* in terms of having status and approval, from family and the society in general (Carter *et al.*, 2003). Entrepreneurs represent active economic agents that are recognised for their contribution both to society and the economy (van Praag and Versloot, 2007). Individuals looking to gain recognition either within or outside their close social circles will be more willing to engage in entrepreneurial activities.

As far as intrinsic motives are concerned, independence, innovation and self-realisation are reasons why individuals are engaged in entrepreneurial activities. *Independence* describes an individual's desire for freedom, control, and flexibility. Entrepreneurship can fulfil individuals' need for autonomy because entrepreneurs have decisional freedom, can avoid work related restrictions, act in a self-endorsed and self-congruent manner and are in charge of the venture creation and growth process (van Gelderen and Jansen, 2006). It is therefore expected that individuals with high levels of need for independence will be more inclined towards entrepreneurship. *Innovation* refers to an individual's motive to accomplish something new (Carter *et al.*, 2003). The entrepreneur is considered to be a catalyst for innovation by introducing new products, services and processes to the market (Schumpeter, 1934; Scherer, 1984). Based on this, individuals with the desire for innovation will have a more positive approach regarding their engagement in entrepreneurial activities. Finally, *self-realisation* describes motives involved with pursuing self-directed goals (Carter *et al.*, 2003). Venture creation and growth is a process entailing ongoing challenges related to competitiveness, obstacle overcoming, development, success as well as excitement, commitment and joy (Dodd, 2002). Individuals with greater goal achievement needs related to self-realisation will perceive entrepreneurship as a viable route in challenging themselves to fulfil personal visions. Based on the above analysis, the following hypothesis is formulated:

***Hypothesis 2: Financial success (a), independence (b), innovation (c), recognition (d) and self-realisation (e) relate positively to investment intention.***



#### ***4.2.4 Financial crisis***

During a financial crisis and a period of austerity, venture creation and growth can be seen either as a threat or an opportunity (Penrose, 2000). Variations in individuals' perceptions regarding risks and opportunities influence their decision to act entrepreneurially (Shane and Venkataraman, 2000). Individuals decide to engage in entrepreneurial activities by comparing the maximum utility from paid-employment and entrepreneurship (Parker, 2004; 2005). This can be both in the form of financial or psychological returns, stemming from someone fulfilling his/her motivational aspirations. Individuals' capital and motives and the circumstances in relation to the impact that the environment has had on them can better explain their decision to engage in entrepreneurial activities. More specifically, potential changes in an individual's employment and consequently financial status -as a result of the financial crisis- are considered to be very important situational influences that push individuals towards entrepreneurial activities (Davidsson, 1995a). Considering that recessions are linked to lower income, stricter supervision, higher pressure, more stress at work, threat of job loss and actual job loss, entrepreneurship may seem an attractive alternative (Biehl *et al.*, 2014). Lack of opportunities for employment or advancement, a decline in income or worse working conditions could be related to increased entrepreneurial activity (Gilad and Levine, 1986; Dyer, 1994; Walker and Webster, 2007). Job loss, due to public sector restructuring or government cutbacks, may also lead to entrepreneurial activities (Hughes, 2003). Reducing the workforce by downsizing might affect individuals' decisions to create their own venture (Feldman and Bolino, 2000). Under constrained financial circumstances, which the individual cannot control, entrepreneurship may flourish not as a consequence of actual job loss, but rather as a fear of lay off (Hughes, 2003). Individuals may also create ventures as they see their relatives and friends being made redundant (Kirkwood, 2009a; 2009b). Necessity entrepreneurship may rapidly flourish during the financial crisis as paid employment options diminish or are considered to be vain and vague (Storey, 1982). Given that paid and self-employment both entail risk during a period of crisis, it can be argued that individuals' occupational choice is based on avoiding the relatively riskier employment proposition. Namely, those individuals who have experienced the negative

consequences of the crisis more deeply may be more willing to pursue alternative career paths by investing their forms of capital and creating or participating in a venture rather than searching for employment under a different employer and possibly facing the same issues in the near future. More specifically, it is expected that when the financial crisis affects individuals' income and work situation negatively that they will be more willing to pursue strategies to compensate for their perceived and actual losses. Investing available forms of capital in order to initiate entrepreneurial actions may be such a strategy.

Moreover, the negative effects of the financial crisis on individuals' income and work situation are likely to activate individuals' prominent need for financial success, recognition, independence, self-realisation and innovation toward entrepreneurial investment. Strict working conditions and income reductions also influence individuals' psychology. Situational or environmental circumstances may cause specific psychological needs that once were absent to appear and psychological needs that already existed at lower levels to come to the surface. In this regard, individuals, who have felt the negative effects of the financial crisis on their work and income, are likely to be more motivated to feel independent, to choose their way to innovate at work, to feel able to fulfil their personal goals including their desire for financial gains and for gaining recognition from family, friends and society. Under these circumstances, the need for innovation, independence, self-realisation, financial success and recognition becomes stronger. Individuals search for alternative occupation options such as investment activities that may provide them with the prospect of fulfilling their needs. It is therefore hypothesised that the relationship between the various intrinsic (innovation, independence, self-realisation) and extrinsic (recognition, financial success) motives and the investment intention will be stronger for those individuals whose income and work have been affected in a negative way due to the financial crisis.

Based on the above assumption and in an attempt to explore when certain positive relationships may hold between capital-motives and investment intention, the following hypotheses are formulated:

***Hypothesis 3: The effects of the financial crisis on the income (a) and work situation (b) moderate the relationship between human, social and financial capital on***

*the one hand and investment intention on the other hand. Namely, the positive relationship between capital and investment intention will be stronger for those who report that the financial crisis has affected their income / work in a negative way.*

***Hypothesis 4:*** *The effects of the financial crisis on the income (a) and work situation (b) moderate the relationship between the different motives and the investment intention. Namely, the positive relationship between motives and investment intention will be stronger for those who report that the financial crisis has affected their income / work in a negative way.*

### **4.3 Methodology**

#### **4.3.1 Procedure and Participants**

The present study was conducted during the period November-December 2011. Data was collected via online questionnaires. Investment intentions may be generated from individuals of any age who possess skills and access to networks or resources and have the desire to utilise them by participating in the creation of a new venture or in an existing one. Therefore, participants could be employed or unemployed. The questionnaire's web address was emailed to a convenience sample of about 500 professionals (both private and public sector) and 150 unemployed people (mainly students). A letter was attached to the email in order to explain the purpose of the study (i.e. to investigate investment activities), the time needed for answering the questionnaire and the deadline for filling in the survey. It was emphasised that individuals' participation in the study was voluntary and anonymous. Fifteen days after sending out the questionnaire a reminder was sent. The survey was also posted online (for example, on social networking sites) targeting both professionals and unemployed individuals. Due to the online data collection, it was not possible to estimate an actual response rate. All participants were clearly informed that investment activities refer to individuals' investment of skills, networks or resources in new/existing ventures.

Out of 395 responses, 245 were completed fully (150 participants did not fill in most parts of the questionnaire and were withdrawn from the final sample). Eligible participants were those who reported that they did not have investment experience at the time that the study was conducted, so that the data collected was free from retrospective

bias (Gartner, 1989). Participants were selected on the basis of the following question that opened the survey: “Have you ever invested and /or are you still investing any of your skills, knowledge, resources (not exclusively financial capital) or access to networks in a project, in exchange for a stake in the project or a share in the project's revenues? The ‘project’ can be a new business venture, but it could also be other types of projects.” Eighty-three participants (34% of the total sample) indicated that they were currently involved or had been involved in the past in investment activities. The remaining 162 participants (66% of the total sample) indicated that they had never been engaged in investment activities.

The final sample ( $N=162$ ) consisted of 62 men (38%) and 100 women (62%), whose mean age was 31.5 years ( $SD = 9.2$ ). The vast majority of participants were highly educated, with 47% holding a university degree and 30% a master’s degree. In terms of employment status, sixty-three per cent of participants were employed, while the remaining 37% were unemployed. Those employed reported a mean job tenure of 8.8 years ( $SD = 7.8$ ), and that they worked on average 37 hours per week ( $SD = 14$ ). Finally, 70% of the participants were single (never married), while 27% were married or cohabiting. It is noteworthy that the sample is rather comparable to the Greek population in terms of gender, education and employment status. More specifically, according to the latest census released for publication, 51% of individuals of Greek nationality and residents are females (ELSTAT, 2001). Also, sixty-one percent of the Greek population between 25-64 years have attained at least an upper secondary education, while 47.2% of young individuals hold a tertiary degree (OECD, 2011b). Finally, the persons employed as a percentage of the total labour force in Greece was greater than those who were unemployed (84% employed while the remainder were unemployed) (ELSTAT, 2014b).

#### **4.3.2 Measures**

*Human Capital* was measured by means of educational level, organisational tenure and skills (derived from education and experience). *Educational level* was measured with one item, where participants were asked to fill out the highest level of education that they had achieved (that is, (1) = primary education to (6) = PhD). *Organisational Tenure* was measured with one item asking participants how many years of working

experience they have had in their current job position (e.g. they had to reply 0, if unemployed). *Skills Derived from Education* was measured with a 6-item scale. Participants were asked to rate their level of experience in six different skills management, marketing, financial, legal, technical and IT skills (Cronbach's  $\alpha = .70$ ). *Skills Derived from Experience* was also measured with a 6-item scale (see Table 1). Participants were asked to rate their level of experience in the same six skills (Cronbach's  $\alpha = .74$ ). In both scales response options ranged from (1) = No skill to (5) = Advanced skill. Given that the "skills" variable combines two sub-scales (i.e., skills derived from education and skills from experience), a single factor score stemming from these sub-scales was computed and used in further analyses (Rietveld and van Hout, 1993). To do so, a principal axis factoring (PAF) analysis was performed with the total scores of these two variables. The advantage of this method is that it takes into account the factor loadings of each sub-dimension, while calculating the factor score (Xanthopoulou *et al.*, 2009). The total factor score for skills explained 87% of the total variance.

*Social Capital* measures were adapted from Chen *et al.* (2009). *Bonding Social Capital* was measured by means of five subscales measuring members of the social circle, contacts in the social circle, trust in the social circle, help from the social circle, and level of resource assets from the social circle. More specifically, members of the social circle were measured by means of 6-items from Chen *et al.* (2009). Participants were asked to rate how many members their social circles featured (for example, "Your family members"; Cronbach's  $\alpha = .65$ ). *Contact* with individuals was measured with 6-items, where individuals were asked "With how many people in each of the following categories (that is, family members, relatives, neighbours, friends, colleagues, classmates) do you keep in routine contact?" (Cronbach's  $\alpha = .73$ ). *Trust in social circle* was measured by asking participants to rate how many people they can trust in each of the 6 categories (6-item scale, Cronbach's  $\alpha = .71$ ). *Help* from individuals was measured with 6 items, where participants were asked to rate how many people from the requested six categories would definitely help them if they asked (6-item scale, Cronbach's  $\alpha = .82$ ). Finally, the *level of resources-assets* related to the social circle was measured by means of six items, where participants were asked to answer the question: "Of people that you know, how many possess the following

*assets/resources?*” (for example, “*certain political power*”; Cronbach’s  $\alpha = .75$ ). All items of these subscales were scored on a five-point Likert-type scale ranging from (1) = many/ all to (5) = a few/ none. All scales were reverse-coded so that high scores refer to high levels of bonding capital. PAF analyses were performed with these five subscales, which resulted in one total factor that explained 43% of the explained variance. This bonding social capital factor score was used in the study analyses.

*Bridging Social Capital* was measured by three subscales. *Help from groups/organisations* was measured with a 5-item scale asking participants to determine which of the groups and organisations mentioned would help them if asked (for example, “*Governmental & Political*”; Cronbach’s  $\alpha = .86$ ). *Contact with groups/organisations* was measured with a 5-item scale, where participants were asked to rate how often they participate in activities and events organised by a list of five groups (for example, “*social groups*”; Cronbach’s  $\alpha = .81$ ). Finally, *Level of resources-assets possessed by groups/organisations* was measured with a 5-item scale, where participants were asked the following question: “*When all groups and organisations in the five categories are considered, how many possess the following assets/resources?*” (for example, “*Significant power for decision making*”; Cronbach’s  $\alpha = .85$ ). All items of these subscales were scored on a five-point Likert-type scale ranging from (1) = all/very often to (5) = none/never. All scales were recoded so that high scores referred to high levels of social capital. PAF analyses of these three subscales resulted in one total factor that explained 46% of the explained variance. This bridging social capital factor score was used in the study analyses.

*Financial Capital* was measured not only in the form of financial resources that can be invested in the venture but also in the form of non-financial resources that can reduce the financial barriers when brought into the venture. *Financial resources* in the form of *Net Financial Assets* (Kim *et al.*, 2006) was measured with a single item (cash) while *Non-Financial Resources* were measured with eight items (Land, Buildings, Equipment, Machinery, Transportation, Raw materials, IT resources e.g. hardware or software and Human resources e.g. staff time). Participants were asked to indicate “*which of the resources that they currently own would they be prepared to share in a new venture that they truly believed in*”. Response options ranged from (1) = I do not have this resource, (2) = Not prepared at all to (6) = Very prepared. This way of measuring financial capital

allowed us to spot those individuals who had no capital to invest (i.e. response option 1). Given that the investigation concerned whether those who do possess financial capital were willing to invest it, response option (1) was treated as a missing value in the final analyses. The Net-Financial Resources sub-scale showed good reliability (Cronbach's  $\alpha = .92$ ).

*Motives* were measured by using items adapted from Carter *et al.* (2003). Participants were asked to rate the extent to which certain motives would be important for them, if they were to engage in investment activities. *Financial Success* was measured with three items (e.g. to earn a larger personal income; Cronbach's  $\alpha = .83$ ), *Independence* was measured with two items (e.g. to have greater flexibility for my personal and family life; Cronbach's  $\alpha = .64$ , inter-item correlation  $r=.47$ ), *Innovation* was measured with three items (e.g. to be innovative and in the forefront of technology; Cronbach's  $\alpha = .82$ ), *Recognition* was measured with three items (e.g. to achieve something and get recognition for it; Cronbach's  $\alpha = .79$ ) and *Self-realisation* was measured with four items (e.g. to challenge myself; Cronbach's  $\alpha = .82$ ). Response options in all scales ranged from (1) = to no extent to (5) = to a very great extent.

*Effects of the Financial Crisis.* Two types of effects of the financial crisis were measured, namely the effect of the crisis on participants' *work* and the effect of the crisis on participants' *income*, with one item each. Participants were asked to rate the following two items: "In which way did the financial crisis affect your work/ financial situation?" on a 10-point scale ranging from (1) = very negatively to (10) = very positively. Each item was treated as a separate variable in the analyses.

*Investment Intention* was measured with two items based on van Hooft and de Jong (2009), which were adapted so as to refer to participants' intentions to invest various forms of capital. Participants were asked to rate whether they agreed with the following statement regarding a venture that they truly believe in: "I really intend to engage in investment activities within the next three months (response options ranging from (1) totally disagree to (5) = totally agree). They also had to respond to the following question: "How much time do you intend to spend in investment activities during the next three months?" (response options ranging from (1) = no time at all to (5) = very much time). The reliability coefficient for this scale was  $\alpha = .69$  and the inter-item correlation was  $r = .52$ .

### **4.3.3 Strategy of analysis**

Hypotheses were examined by means of hierarchical moderated regression analyses. Each hypothesised interaction effect was calculated in a separate regression analysis in order to overcome potential collinearity problems (van Vegchel *et al.*, 2004). The hypothesised two-way interaction effects that combined each of the different independent variables and the two types of effects of the financial crisis were tested in a series of 24 separate regression analyses. In each hierarchical regression, each specific predictor and each of the two types of crisis effects were included in the first step (test of main effects), and their interaction (multiplicative term) was included in the second step. Non-categorical predictor and moderator variables were standardised prior to calculating the cross-product interaction terms. Significant interactions were probed with the simple effects approach, and were plotted by using one standard deviation above and one below the mean of the predictor and moderator variables (Preacher *et al.*, 2006).

## **4.4. Results**

Descriptive statistics in the form of means, standard deviations and correlations between the study variables are presented in Table 1.

### **4.4.1 The effects of human, social and financial capital**

According to Hypothesis 1a, human capital (that is, educational level, organisational tenure, and skills) was expected to relate positively to investment intention. Hypothesis 1a was supported only for skills and tenure. Results in Table 2 show that the availability of skills related positively to investment intention ( $\beta = .25, p < .01$ ). Contrary to Hypothesis 1a, tenure related negatively to investment intention, suggesting that individuals with less working experience had a higher intention to invest skills. Individuals' educational level was not related significantly to investment intention. According to Hypothesis 1b and 1c social capital (bonding and bridging) and financial capital (net financial assets and non-financial resources) were expected to relate positively to investment intention. The results provide full support for Hypothesis 1b, since both bonding ( $\beta = .17/.16, p < .05$ ) and bridging ( $\beta = .19/.27, p < .001$ ) social capital were found to relate positively to investment intention (Table 2). However,



results provided partial support for Hypothesis 1c since only non-financial resources ( $\beta = .27, p < .01$ ) but not net financial assets related positively and significantly to investment intention.

Hypothesis 3, which concerned the interaction capital x financial crisis interaction effect in predicting investment intention, was tested with the same set of analyses that were performed to test Hypothesis 1. Interaction effects concerning human capital and financial resource factors were not significant. With regard to the social capital factors, Table 2 shows that bonding social capital (but not bridging social capital) interacted with the effects of the crisis on income ( $\beta = -.16, p < .05$ ) in predicting investment intention. In line with Hypothesis 3, Figure 2 shows that a positive relationship between bonding social capital and the intention to invest existed only for those who reported that the crisis had affected their income in a negative way (simple slope at  $-1SD$  of the moderator: estimate = .31,  $p = .002$ ), while the relationship between bonding social capital and investment intention was not significant for those who reported that the crisis had affected their income in a positive way (simple slope at  $+1SD$  of the moderator: estimate = .004,  $p = .97$ ). In summary, these results provide some support for Hypothesis 3.

**Table 4.1 Means, standard deviations, internal consistencies and correlations between the study variables (N=162)**

		Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Educational Level	3.98	1.01	-														
2	Organisational Tenure	8.83	7.75	-.21*	-													
3	Skills	2.55	.68	.16*	.08	-												
4	Bonding Social Capital	3.07	.44	.05	-.03	-.12	-											
5	Bridging Social Capital	2.66	.59	.16*	-.00	-.29**	.60**	-										
6	Net Financial Assets	2.95	1.14	.19	-.10	.29**	-.18	-.25*	-									
7	Non-Financial Resources	3.61	1.28	.08	-.07	.23**	-.03	-.18*	.62**	-								
8	Innovation	2.97	.93	.22**	-.11	.27**	-.20*	-.25**	.20	.23**	-							
9	Independence	3.64	.84	.07	-.26*	.06	-.12	-.26*	.15	.20	.46**	-						
10	Recognition	2.88	.96	.07	-.02	.18*	-.19*	-.26**	.21	.11	.46**	.50**	-					
11	Financial Success	3.93	1.04	-.22	.16	.23	-.12	.02	-.18	-.057	-.03	.11	.34*	-				
12	Self-Realisation	3.40	.92	.02	-.09	.19*	-.33**	-.36**	.16	.22**	.54**	.47**	.62**	.25	-			
13	Effect of Crisis on Work	3.41	2.18	.07	.04	.09	-.09	.00	.15	.055	-.10	-.07	.05	-.01	-.01	-		
14	Effect of Crisis on Income	3.54	2.18	.07	.00	.18*	-.12	-.09	.22*	.09	.08	-.01	.11	-.45**	.08	.64**	-	
15	Investment Intention	2.75	.89	.03	-.15	.27**	-.19*	-.27**	.16	.28**	.37**	.33**	.20*	.10	.47**	-.09	.01	-

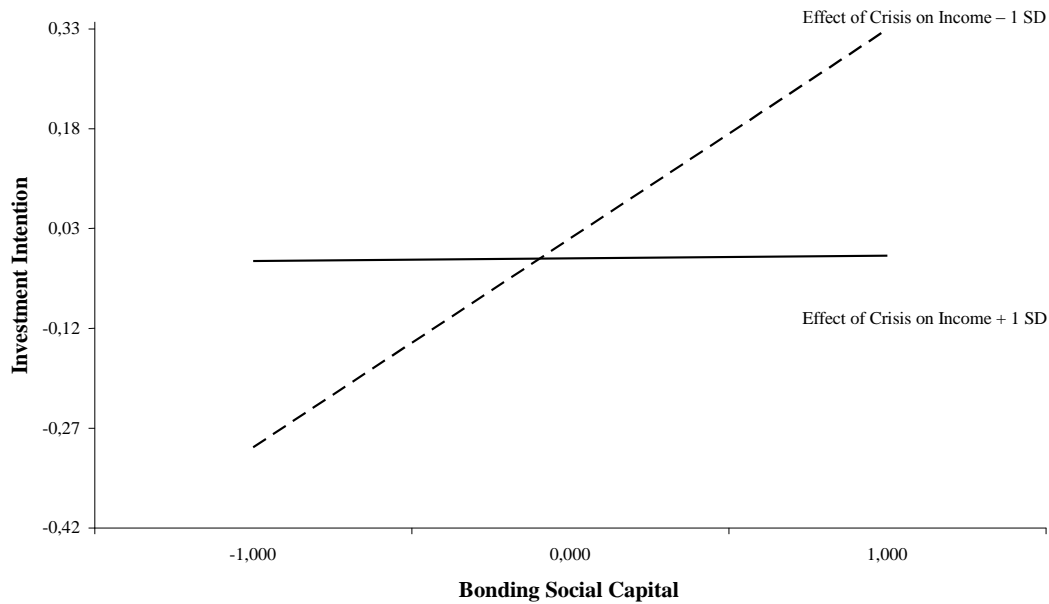
Note. \*\* p < .01, \* p < .05

**Table 4.2 Results of hierarchical moderated regression analyses: Main and interaction effects of human, social and financial capital factors and effects of crisis on investment intention (N=162)**

Effects of Crisis on Work (ECW)		Investment Intention				Effects of Crisis on Income (ECI)		Investment Intention			
Step	Variables	$\beta$	<i>t</i>	$\Delta R^2$	$\Delta F$	Variables	$\beta$	<i>t</i>	$\Delta R^2$	$\Delta F$	
1	Educational Level	.04		.01	.79	Educational Level	.02	.30	.00	.06	
	ECW	-.08				ECI	.01	.10			
2	Educational Level x ECW	-.12		.01	2.03	Educational Level x ECI	-.03	-.42	.00	.18	
1	Organisational Tenure	-.18*	-2.16	.04	2.95*	Organisational Tenure	-.19*	-2.33	.03	2.63	
	ECW	-.07	-.84			ECI	.02	.28			
2	Organisational Tenure x ECW	.04	.49	.00	.24	Organisational Tenure x ECI	.03	.42	.00	.18	
1	Skills	.25**	3.28	.08	6.25**	Skills	.25**		.06	5.27**	
	ECW	-.12	-1.48			ECI	-.05	-.63			
2	Skills x ECW	.07	.87	.01	.76	Skills x ECI	.08	.99	.01	.97	
1	Bonding Social Capital	.17*	2.13	.05	3.64*	Bonding Social Capital	.16*	2.04	.03	2.74	
	ECW	-.10	-1.23			ECI	-.02	-.21			
2	Bonding Social Capital x ECW	-.08	-.93	.01	.87	Bonding Social Capital x ECI	-.16*	-2.05	.03	4.22*	
1	Bridging Social Capital	.19***	3.60	.08	6.89***	Bridging Social Capital	.27***	3.47	.07	6.18**	
	ECW	-.09	-1.16			ECI	-.12	-1.15			
2	Bridging Social Capital x ECW	.07	.84	.00	.70	Bridging Social Capital x ECI	-.01	-.07	.00	.00	
1	Net Financial Assets	.18	1.63	.04	1.91	Net Financial Assets	.21	1.89	.06	2.63	
	ECW	-.15	-1.32			ECI	-.18	-1.62			
2	Net Financial Assets x ECW	.06	.47	.00	.21	Net Financial Assets x ECI	-.03	-.24	.00	0.55	
1	Non-Financial Resources	.27**	3.35	.09	7.51**	Non-Financial Resources	.27**	3.39	.08	6.15**	
	ECW	-.14	-1.82			ECI	-.07	-.83			
2	Non-Financial Resources x ECW	.10	1.25	.01	1.57	Non-Financial Resources x ECI	.12	1.52	.01	2.31	

Note. \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$

**Figure 4.2 Bonding social capital and investment intention: The moderating role of the effect of the financial crisis on income**



Note. -1SD = Negative effect of crisis on income; +1SD = Positive effect of crisis on income

#### 4.4.2 The effects of motives

Hypothesis 2 (a-e), which concerned the positive effects of the different motives (i.e., financial success, independence, innovation, recognition, self-realisation) on investment intention, and Hypothesis 4, which concerned the interactions between the different motives and the effects of crisis on income (4a) and the work situation (4b) in predicting intention to invest, were tested within the same set of hierarchical regression analyses (see Table 3). Hypothesis 2a was rejected because financial success did not relate significantly with investment intention. Hypotheses 2 b-e were all supported given that innovation, independence, recognition, and self-realisation related positively to investment intention ( $\beta$ s ranging from .20 to .45,  $.01 < p < .001$ ).

As concerns the interaction effects Table 3 shows that financial success interacted with the effect of the crisis on income in predicting investment intention ( $\beta = -.40, p < .01$ ). Figure 3 supports Hypothesis 4a since it shows that the motive for financial success on investment relates positively with investment intention only for those whose income was affected in a negative way by the crisis (simple slope at -1 SD: estimate = .30,  $p = .05$ ), while the relationship was not significant for those whose income was affected in a positive way during the crisis (simple slope at +1 SD: estimate = -.19,  $p =$

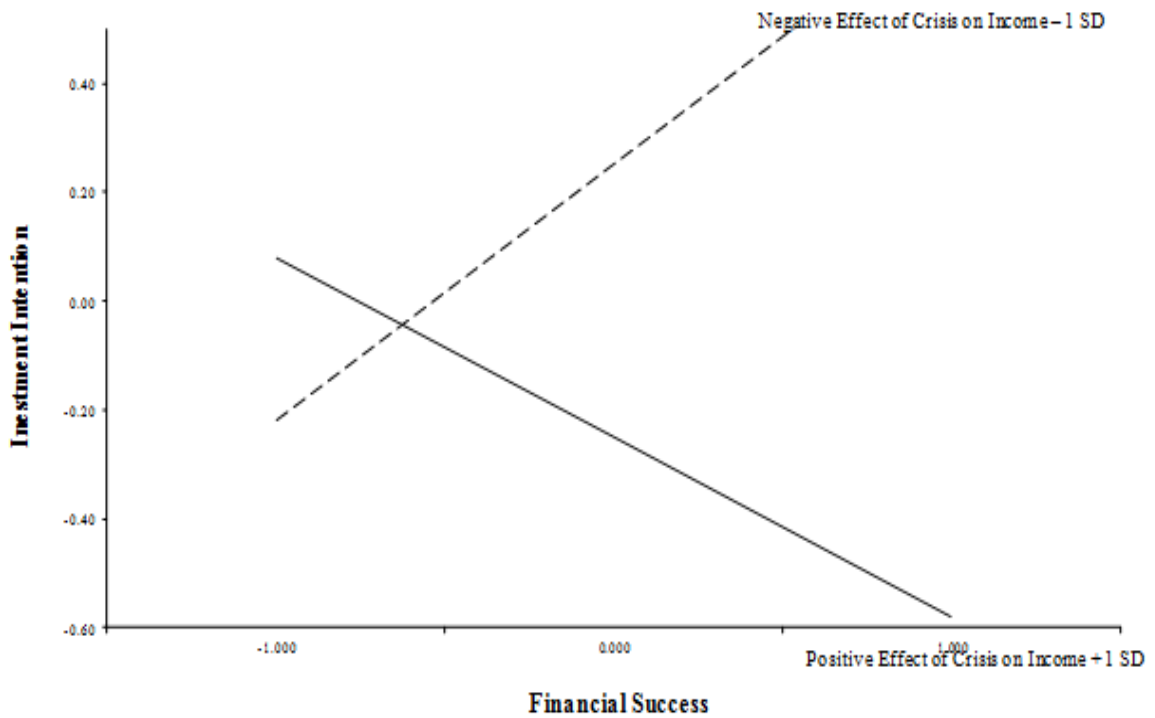
.16). As regards Hypothesis 4b, Table 3 shows that independence ( $\beta = .24, p < .05$ ), recognition ( $\beta = .20, p < .01$ ), and self-realisation ( $\beta = .14, p < .05$ ) interacted with the effect of the crisis on the work situation in predicting investment intention. Figures 4 and 5 show that the relationship between independence (simple slope at  $+1SD$ : estimate =  $.46, p < .001$ ) and recognition (simple slope at  $+1SD$ : estimate =  $.35, p < .001$ ) with investment intention was positive only for those whose work was affected by the crisis positively, while the relationship was non-existent for those whose work was affected negatively by the crisis (simple slope at  $-1SD$  for independence: estimate =  $.07, p = .56$ , and for recognition: estimate =  $.01, p = .91$ ). The simple slopes test resulted in slightly different outcomes for the interaction effect concerning self-realisation. As shown in Figure 6, the relationship between self-realisation and investment intention was positive for both those whose work was affected by the crisis in a positive way (simple slope at  $+1SD$ : estimate =  $.50, p < .001$ ), and for those whose work was affected by the crisis in a negative way (simple slope at  $-1SD$ : estimate =  $.28, p < .01$ ). These results provide some support for Hypothesis 4b.

**Table 4.3 Results of hierarchical moderated regression analyses: Significant main and interaction effects of motives and effects of crisis on investment intention (N=162)**

Effects of Crisis on Work (ECW)		Investment Intention				Effects of Crisis on Income (ECI)		Investment Intention		
Step	Variables	$\beta$	$t$	$\Delta R^2$	$\Delta F$	Variables	$\beta$	$t$	$\Delta R^2$	$\Delta F$
1	Innovation	.36***	4.78	.14	12.43***	Innovation	.37***	4.91	.14	12.13***
	ECW	-.06	-.85			ECI	-.05	-.60		
2	Innovation x ECW	.05	.59	.00	.35	Innovation x ECI	.13	1.69	.02	2.85
1	Independence	.31**	3.14	.12	5.84**	Independency	.32**	3.16	.11	5.25**
	ECW	-.15	-1.49			ECI	-.06	-.60		
2	Independence x ECW	.24*	2.33	.05	5.43*	Independency x ECI	.17	1.63	.03	2.66
1	Recognition	.20**	2.61	.05	4.32*	Recognition	.21**	2.64	.04	3.38*
	ECW	-.13	-1.70			ECI	-.02	-.28		
2	Recognition x ECW	.20**	2.57	.04	6.62**	Recognition x ECI	.05	.65	.00	.42
1	Financial Success	.11	.71	.10	2.58	Financial Success	.07	.45	.03	.74
	ECW	-.30*	-2.15			ECI	-.25	-		
2	Financial Success x ECW	.03	.22	.00	.05	Financial Success x	-.40**	-	.15	8.38**
1	Self-Realisation	.44***	6.15	.21	20.40***	Self-Realisation	.45***	6.26	.20	19.45***
	ECW	-.010	-1.35			ECI	-.04	-.59		
2	Self-Realisation x ECW	.14*	1.96	.02	3.85*	Self-Realisation x	.06	.77	.00	.60

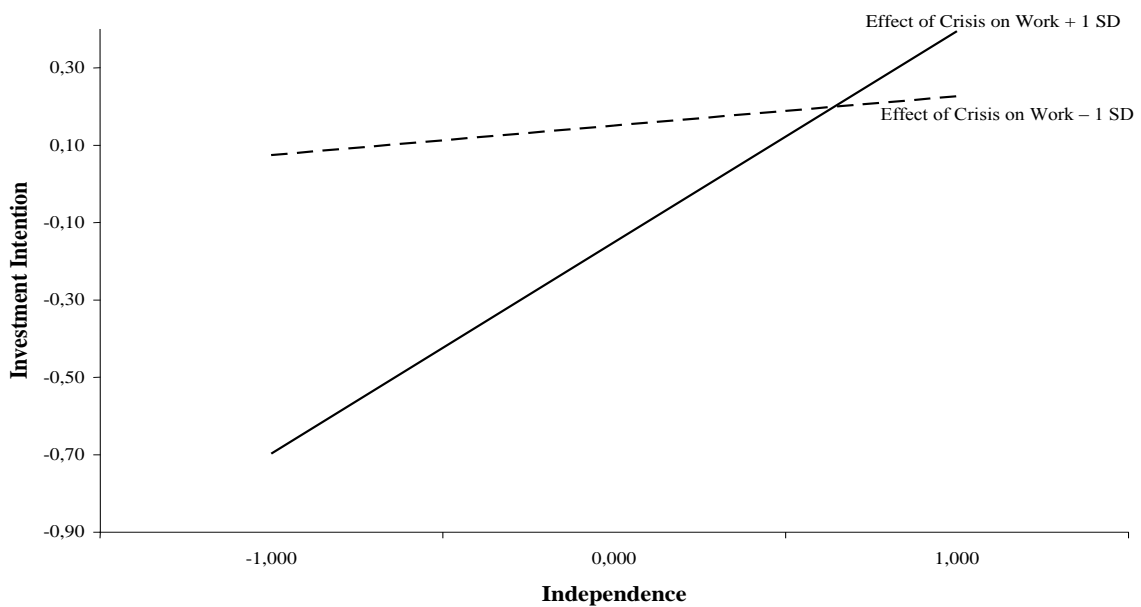
Note. \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$

**Figure 4.3 Financial success and investment intention: The moderating role of the effects of the financial crisis on income**



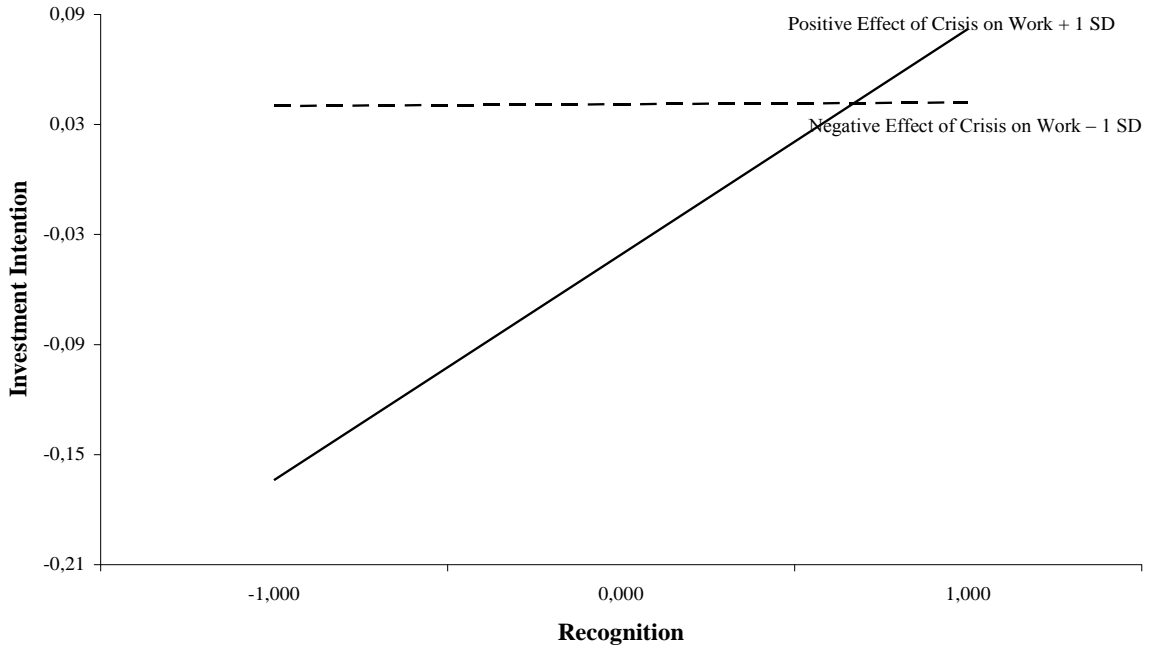
Note. -1SD = Negative effect of crisis on income; +1SD = Positive effect of crisis on income

**Figure 4.4 Independence and investment intention: The moderating role of the effect of the financial crisis on work**



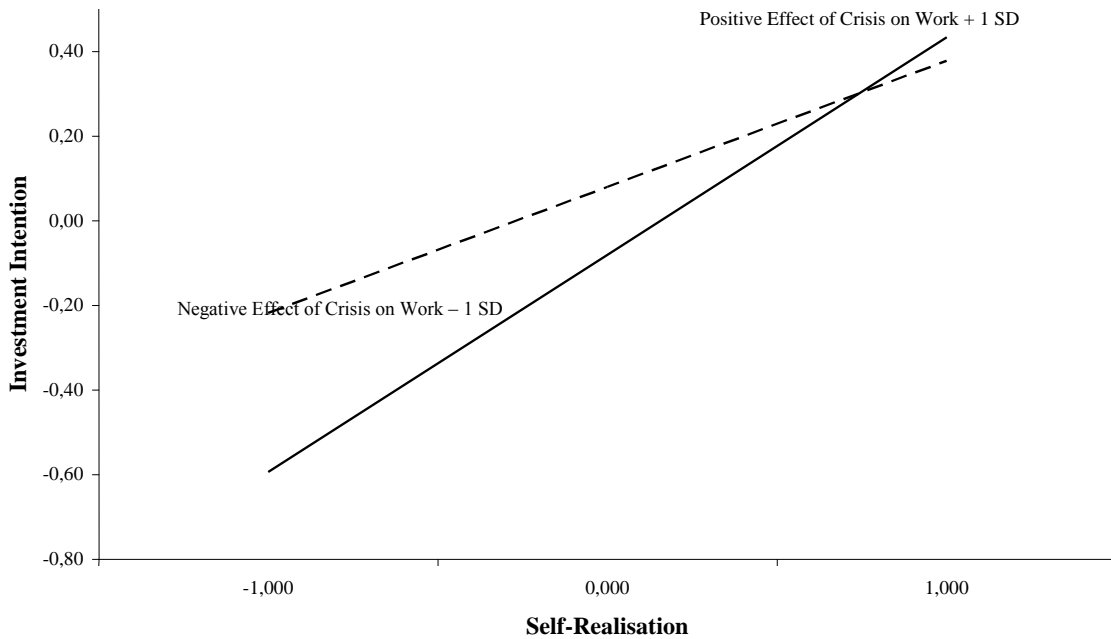
Note. -1SD = Negative effect of crisis on work; +1SD = Positive effect of crisis on work

**Figure 4.5 Recognition and investment intention: The moderating role of the effects of the financial crisis on work**



Note. -1SD = Negative effect of crisis on work; +1SD = Positive effect of crisis on work

**Figure 4.6 Self-Realisation and investment intention: The moderating role of the effects of the financial crisis on work**



Note. -1SD = Negative effect of crisis on work; +1SD = Positive effect of crisis on work



## **4.5 Discussion**

The conceptual model adapted Bird's (1988) theory that personal and environmental variables shape individuals' rational and intuitive thinking, which determines intentions. Components related to individuals' abilities and economic factors in a given environment were adapted and applied in the investment context. Bird's (1988) model was expanded by including the role of motives, which determines the psychological profile of potential investors and consequently forms investment intentions. Economic environmental factors were expressed in the form of the financial crisis. Going beyond Bird's (1988) model, the moderating effects of the financial crisis on the person-intention relationship were examined. The person was defined by one's human, social, financial capital and motives.

### ***4.5.1 The role of human, social and financial capital***

The first research objective was to examine how human and social capital might influence investment intention. The findings of this study suggest that the availability of the skills typically needed by all ventures, such as general management, marketing and accounting, that is those typically falling within the business and management competencies (Mitchelmore and Rowley, 2010), related positively to investment intention. This is in line with the work of Crant (1996) showing that MBA students (who typically develop a range of such horizontal skills) had a higher level of intention to own a business in contrast to students coming from other disciplines. Regardless of whether the decision may refer to different ways of acting entrepreneurially, in order to invest one's skills, individuals need to possess them. In line with previous findings regarding work experience and the probability of engaging in start-up activities (Autio *et al.*, 2001; Davidsson and Honig, 2003; Carr and Sequeira, 2007), this study found that work experience was significantly related to investment intention. However, in contrast to previous studies it was found that individuals with no or few years of working experience had a higher investment intention than those with more experience. This may be due to the opportunity cost being lower for early career professionals, compared to more established ones, who already have a track record and would prefer security over higher gains. In contrast to previous research that links individuals' education to entrepreneurship (Davidsson and Honig, 2003; Arenius and Minniti, 2005;

de Clercq and Arenius, 2006; Kim *et al.*, 2006; Drost, 2010), this human capital component was not related to individuals' investment intentions. Some proxies of human capital may exert an indirect influence on investment intentions via the psychological antecedents of intentions (Kolvereid, 1996b; Kolvereid and Isaksen, 2006; Wu and Wu, 2008; Liñán and Chen, 2009; Iakovleva *et al.*, 2011). For instance, it may be argued that general knowledge gained through education influences investment intention through specific knowledge such as knowledge about management issues. This is consistent with previous research indicating that specific knowledge is valuable in the entrepreneurial process (Haynes, 2003; Gimmon and Levie, 2010).

The results of this study complement existing research (Davidsson and Honig, 2003; de Clercq and Arenius, 2006; Liñán, 2008; Cetindamar *et al.*, 2011) that has used more parsimonious measurements of an individual's social capital, offering support for the positive link between social capital and entrepreneurial actions. Using a more comprehensive measurement of individuals' social capital by including members, frequent contacts, trust relationships, help and benefits that their personal network can offer either through strong or weak ties, this study found that both bonding and bridging social capital related positively to investment intentions. Greece has a collectivistic culture in which individuals are fundamentally connected through relationships and group memberships (Hofstede, 1980). It is therefore not surprising to find that Greeks with higher levels of personal social capital would be willing to share it as they place a great value on relationships and the role that these relationships may play in facilitating their goals.

When it comes to financial capital, previous research (Arenius and Minniti, 2005; Kim *et al.*, 2006; Cetindamar *et al.*, 2011) showed that its availability may be both an encouragement, but also a barrier to acting entrepreneurially. On one hand, financial capital may lower the financial barriers, but on the other hand the income security of employment is considered more important than gains through self-employment. In this study, the availability of net financial assets was not found to relate significantly to investment intentions. However, participants reported that they were willing to invest their non-financial resources. One possible explanation may be the fact that Greeks were facing extreme financial constraints during the period when the study was conducted and preferred to take risks related to losing non-financial resources in

contrast to losing money. Given the uncertainty as to how long the crisis will last, savings may serve as a security pillar for covering basic needs in the future. The above findings are broadly consistent with the qualitative findings of the skills brokerage business model (Papagiannidis and Li, 2005). Accordingly, if financial capital IS NOT readily available then other forms of capital could be sourced from the market. Baker (2007, p. 699) succinctly summarises this: *“What is interesting is not the simple fact of starting with little, or the sensible response of avoiding activities that devour liquidity, but rather the active things that resource-constrained entrepreneurs do in order to access, draw upon and combine other resources that are available cheaply or for the taking”*.

As concerns the moderating effects of the financial crisis, findings indicated that bonding social capital interacted with the effects of the crisis on income in predicting investment intention. More specifically, this study found that a positive relationship between bonding social capital and the intention to invest does exist but only for those who reported that the crisis had affected their income in a negative way. These results suggest that even in constrained environments, pursuing opportunities by mobilising resources through social networks (Kodithuwakku and Rosa, 2002) is a viable option for individuals to participate in the venture creation process by investing their personal social capital. Considering that trust may reduce risk and uncertainty in complex situations (Höhmann and Malieva, 2005), trust relationships are clearly important within an environment that is underpinned by uncertainty. Investment intentions based on bonding social capital, which allows trust relationships to exist, may eventually foster transactions, innovation and economic growth (Woolcock, 1998; Dakhli and de Clercq, 2004).

#### ***4.5.2 The role of motives***

With regard to the role of different motives, this study found that individuals do not intend to invest in new or existing ventures in order to gain financial success. Findings are partly in contrast to previous research that links financial success to entrepreneurial action (Scheinberg and MacMillan, 1988; Birley and Westhead, 1994; Cassar, 2007; Kirkwood, 2009a). However, this non-significant finding may be explained by the significant interaction effect between the motive to do better financially and the effect

of the crisis on income. Results showed that when individuals face difficulties with their income because of the crisis, financial success has a positive relationship with investment intention. Given that the decision to act entrepreneurially depends on the opportunity costs representing the income that can potentially be earned from paid employment rather than through entrepreneurship (Cassar, 2007), the crisis plays a catalytic role for those affected. Financial success becomes a motive only when people face financial problems. Findings are in line with previous work postulating that money should not be considered as the primary motive regarding entrepreneurial action (Amit *et al.*, 2001). Independence (Scheinberg and MacMillan, 1988; Shane *et al.*, 1991; Birley and Westhead, 1994; Amit *et al.*, 2001; Cassar, 2007; Kirkwood, 2009a), innovation (Scheinberg and MacMillan, 1988; Shane *et al.*, 1991; Birley and Westhead, 1994; Amit *et al.*, 2001; Cassar, 2007), recognition (Scheinberg and MacMillan, 1988; Shane *et al.*, 1991; Birley and Westhead, 1994; Cassar, 2007) and self-realisation/challenge (Kolvereid, 1996a; Amit *et al.*, 2001; Cassar, 2007; Kirkwood, 2009a) were found to motivate individuals to engage in entrepreneurial activities and were linked positively to investment intention.

Furthermore, the effect of these motives on investment intention was found to be moderated by the effects of the financial crisis either on work or income. More specifically, independence and recognition had a positive relationship with intention only for those individuals that have experienced better working conditions due to the financial crisis. Self-realisation motives were found to be positively related for those who have been affected both positively and negatively by the crisis. However, the effect was stronger for those whose work was affected positively by the crisis. One possible explanation for these unexpected findings could be that individuals who have faced better conditions in their work even in times of financial crisis may generate higher needs for independence and goal achievement and therefore look for alternative options that may fulfil these needs in the form of investment activities. The perceived better position and performance may boost confidence to pursue such activities. Such perceptions may also feed their recognition needs, with investment activities being more visible than activities when working for a third party. Finally, the motive to be innovative related positively to investment intentions but the relationship remained unaffected by the role of financial crisis on work or income. This may be attributed to

the fact that one's perceived creative capabilities are not externally defined. In other words, the crisis cannot instil a higher need for innovation unless one feels creative anyway.

#### **4.6 Conclusion**

In this study the role of human and social capital on someone's intentions to invest them in a new or existing venture was determined. Especially during times of crisis, individuals possessing certain levels of social capital will be more inclined towards investment activities. On a macro level investments may become a catalytic factor for growth. This is much needed for business environments such as the one considered in this study. Understanding how investments can be facilitated and synergies among entrepreneurial actors be encouraged can be of great practical importance. Findings are significant for policy makers to understand how investment may take place and provide mechanisms to underpin this. Non-financial investment is important in an environment of scarce liquidity and resources. New start-up initiatives could encourage the creation of peer-support networks that will trade human and social capital. The skills brokerage support mechanism touches on something like this (Papagiannidis and Li, 2005; Papagiannidis *et al.*, 2009). Furthermore, the role of motives in investment intention was investigated. Results suggest that individuals are attracted to entrepreneurship and especially investment activities for a variety of reasons. When the negative effects of the financial crisis on income and work are considered, individuals gravitate towards entrepreneurial activities for reasons of necessity. This provides evidence that under certain economic conditions individuals' psychological profile is better determined by their motivation to accomplish financial gains. This is of great importance in that it raises the possibility that the negative effects of the crisis may contribute to necessity rather than opportunity entrepreneurship as expressed in the notion of investment intentions. Considering that opportunity entrepreneurship may drop during the financial crisis (Klapper and Love, 2011), necessity entrepreneurship can boost venture creation and growth as an alternative option that will contribute to long term economic growth both on a personal and aggregate level. Although the motivation may differ in comparison to opportunity entrepreneurship, still the majority of the fastest growing

enterprises according to Fortune 500 were established during times of extreme financial constraints and recession periods (Stangler, 2009).

#### **4.7 Limitations and Future Research**

Data were collected by using self-reported questionnaires. This raises concerns regarding common method variance, which may influence the relationships under investigation. However, Spector (2006) has argued recently that this problem has been exaggerated. Furthermore, mono-method bias is not a major drawback in this study for three reasons: 1) most findings are consistent with the proposed theoretical assumptions; 2) correlations between the study variables were not alarmingly high (see Table 5); and 3) common method variance is more likely to attenuate rather than to inflate interaction effects (Evans, 1985). Another problematic issue with focusing only on self-reports is that these may be a possible source of endogeneity bias. Even though participants' perceptions of the variables under study, as reported through the questionnaires, are an important source of information, perceptions do not necessarily reflect objective reality or available resources may determine personal perceptions of reality (particularly when it comes to the effect of the crisis). However, a careful examination of the descriptive statistics does not reflect such problematic issues, given that the few significant correlations between all types of resources and perceptions of the effect of the crisis were low to moderate (ranging from  $r = .18$  to  $r = .22$ ). Nevertheless, it would be useful if future research could replicate these findings using a combination of self-reports and objective indicators or other-ratings of the variables under study. The present study has resulted in a small number of significant interaction effects, while the significant interaction effects have explained a limited amount of variance in investment. However, according to Frazier *et al.* (2004), this finding is not surprising since effect sizes for interactions are typically small.

Considering that this study examined only investment intentions in a volatile economic environment, it is acknowledged that the relationship between intention and behaviour may depend upon the influence that environmental conditions have on individuals' decisions to transform investment intentions into action. Therefore, future research may employ a longitudinal research design in order to examine whether intentions actually lead to action and whether the financial crisis moderates this link.

Future studies could also examine whether capital factors and motives also predict behaviour through the mediating role of intentions. Also, it would be useful to examine the role of individual investment in the context of entrepreneurial team formation from the team's perspective by measuring shared intentions within teams. This study investigated individuals' intention with a specific focus on their intention to invest diverse forms of capital without differentiating whether the intention to engage in such activities involves new or existing ventures. Future studies could adopt this dichotomy and may shed light on whether investment intentions are differentiated according to the way that individuals will decide to engage. This study was mainly interested in the underlying processes that explain investment intentions and not so much in generalising the study findings to representative samples of the population. Future research could undertake similar investigations in other countries that are underpinned by a similar or different business culture. For example, one could contrast the south and north of Europe (and beyond Europe), also studying the effects of the financial crisis on investment intentions. As noted, the sample of this study was relatively small. This may have resulted in the absence of extreme values in the predictor variables, which makes the support of interaction effects more difficult (McClelland and Judd, 1993b). Larger and more varied samples would also shed additional light on the practical applicability of investment. For instance, future research could consider professionals who are at a late career stage or who have just retired. These should have maximum experience and well-developed human and social capital. In addition, comparative studies among early, medium and late career professionals may yield interesting results. Such investigations could also be undertaken in a qualitative manner, which would result in rich data, highlighting the intentions and interactions among stakeholders. Finally, case studies of ventures in which varied forms of capital have been invested could be examined, offering insights into not only how teams were formed, but also how well they perform.

#### **4.8 Chapter summary**

This chapter examined the moderating role of the financial crisis on the relationship between capital/motives and investment intentions among individuals with a Greek nationality and residence. Human/Social capital, non-financial resources and all motives except financial success related positively to investment intention. Social capital and the

motive for financial success related positively to investment intention only for those affected by the crisis in a negative way. The motives for independence and recognition related positively to investment intention only for those affected by the crisis in a positive way, while the motive of self-realisation related positively to investment intentions particularly for those affected by the crisis in a positive way.

While the moderating role of the financial crisis explained the conditions under which the direct link between capital and investment intentions is present, still the formation of investment intentions under severe economic constraints can be influenced not only by the availability of capital but also by psychological constructs such as personal attitudes, subjective norms and perceived behavioural control, which may play a crucial role in the decision making process. Considering that mediating and moderating effects among the Theory of Planned behaviour antecedents can add extra value to the understanding regarding the formation of investment intentions, the following chapter will explore these effects in the Greek investment context.



## **Chapter 5. Empirical Study II - Explaining investment intentions: An application of the Theory of Planned Behaviour**

### **5.1 Introduction**

Establishing a venture requires a combination of diverse resources that may not be possessed by a single person. When available, financial support from investors can play a catalytic role in putting an entrepreneurial idea into action. The challenge is, though, that in countries which have deeply felt the impact of the financial crisis and austerity measures (i.e. Italy, Spain, Portugal, Ireland and in particular Greece, where this study took place), formal financial capital is also scarce. The austerity measures and increasing taxes have had a major impact not just on the available financial liquidity, but more importantly on the very survival of the people in these countries. This may leave little room for considering informal investing, as friends and family simply cannot afford to do so. According to the Global Entrepreneurship Monitor (GEM, 2013), informal investment rates in Greece have gradually decreased during the past 3 years (5.4% in 2010; 3.7% in 2011; 3% in 2012). At the same time unemployment, especially among younger people, has been escalating. For instance, in Greece, youth unemployment has reached 64% (Lowen, 2013). When faced with such bleak employment prospects, one could consider alternative ways of re-sourcing new ventures. Investors that do not typically fall into the formal/informal group but primarily represent the general public can contribute to the venture creation and growth process not by providing a new entrepreneurial idea but by investing diverse forms of capital in terms of human, social and financial resources in an already identified idea that they truly believe in (Papagiannidis and Li, 2005).

The cooperation between entrepreneurs and potential investors is vital, especially in countries such as Greece, where the impact of the financial crisis is connected to venture capital scarcity. Thus, it is important to understand how potential investors think and behave, in order to be able to promote or reinforce alternative mechanisms that would restart the entrepreneurial process in times of severe constraints. In this study the focus is solely turned on investment intentions and not behaviours because individuals' intentions are considered to be the key predictor of an intentional behaviour and thus intentions have to be examined in their own right (Ajzen 1991; Fishbein and

Ajzen 1975; Krueger 2007; Shapero and Sokol 1982; Armitage and Conner 2001; Sheppard, Hartwick, and Warshaw 1988). Investment intentions are studied by applying the Theory of Planned Behaviour (TPB) (Ajzen, 1991; Ajzen and Fishbein, 2005). The research objective of this study is to understand how the main tenets of TPB help understand intentions in the investment context. In particular, it is investigated whether personal attitudes and perceived control mediate the relationship between norms and investment intention. Moreover, it is examined how these three core antecedents interact simultaneously in explaining investment intention. Findings contribute to a better understanding of investment intentions in the Greek context by going beyond the addition to the ecological validity of the TPB. This study explains the psychological profile of investors and provides evidence regarding the reasons why the norms-intention relationship appears to be weak and the conditions under which the attitude-intention relationship will be stronger in a collectivistic culture such as Greece.

## **5.2 Literature review**

### **5.2.1 *The Theory of Planned Behaviour***

A number of models have been proposed to explain intentions. The Theory of Planned Behaviour (Ajzen, 1991; Ajzen and Fishbein, 2005) has been adopted for analysing investment intentions for three reasons. Firstly, considering entrepreneurship as a societal phenomenon, a model that contains clearly social influences is considered to be more appropriate than other models that do not. Secondly, the theoretical specification of the TPB is more detailed and consistent, as compared to other models (van Gelderen *et al.*, 2008). Finally, research in diverse disciplines confirms that the three main antecedents of intentions according to the TPB (i.e., attitudes, subjective norms, and perceived behavioural control) predict intention and explain a wide range of human behaviours successfully (Armitage and Conner, 2001; Segal *et al.*, 2005).

Despite some inconsistency with regard to the strength of the effects across studies, results have generally showed that positive attitudes and norms, as well as high levels of control, relate positively to entrepreneurial intentions. For instance, the TPB relationships have been confirmed in a sample of university business students in Norway, Bulgaria, Finland, Russia, Netherlands and Spain (Kolvereid, 1996b; van Gelderen *et al.*, 2008; Díaz-García and Jiménez-Moreno, 2010; Engle *et al.*, 2010;

Yordanova and Tarrazon, 2010) but also in sample groups with university students from diverse majors in developing versus developed countries, China, Netherlands, India, Malaysia, Spain, Russia, UK, France, Ukraine, Germany, Austria, Liechtenstein and Switzerland (Tkachev and Kolvereid, 1999; Souitaris *et al.*, 2007; Wu and Wu, 2008; Iakovleva *et al.*, 2011; Liñán *et al.*, 2011c; Mueller, 2011; Moriano *et al.*, 2012; Othman and Mansor, 2012; Solesvik, 2013b). Previous research has verified the TPB proposed relationships among young, prime and third-age entrepreneurs and non-entrepreneurs in Finland (Kautonen *et al.*, 2010; Kautonen *et al.*, 2011; Kautonen *et al.*, 2013; Kibler, 2013). In the USA, Carr and Sequeira (2007) confirmed the link between personal attitude/subjective norms/perceived behavioural control and entrepreneurial intentions among individuals who participated in ethnic, technology, and small business networking organisations and business start-up seminars. The main TPB findings has been replicated in Guzmán-Alfonso and Guzmán-Cuevas's (2012) work based on data from the Global Entrepreneurship Monitor Report referring to Latin America and in Obschonka *et al.*'s (2012) previous research on a sample of academic and non-academic scientists from diverse scientific disciplines in Germany. Moreover, mediating and moderating effects among the TPB constructs have been examined and confirmed (Liñán and Chen, 2009; Liñán *et al.*, 2011c; de Jong, 2013), yet not extensively. In particular, previous research (Liñán and Chen, 2009; Liñán *et al.*, 2011c) has focused on examining the mediating role of attitude and perceived behavioural control in the relationship between subjective norms and individuals' intentions to put an entrepreneurial idea into action in a Spanish and Taiwanese sample. De Jong (2013) has examined the moderating effects among the TPB constructs in explaining acting entrepreneurially by exploiting opportunities for innovation.

The aforementioned studies have applied the TPB in order to predict entrepreneurial intention from the entrepreneurs' perspective in the form of idea generation. As explained previously, it is argued that acting entrepreneurially may encompass intentions to create or grow ventures not only by having exploited an innovative business idea, but also by investing in an already identified innovative idea that they truly believe in. Furthermore, the contribution and the weighting of the core antecedents in the prediction of intention is expected to vary not only across behaviours and situations, but also as a function of the population under consideration (Ajzen, 1991).

Research on Greeks' entrepreneurial intentions has examined the effect of demographic, motivational and environmental factors on individuals' intentions without incorporating the TPB (Fafaliou, 2010; Apergis and Fafaliou, in press). Even in cases where scholars have attempted to integrate some (or similar) aspects of the TPB (Agapitou *et al.*, 2010; Kakouris and Georgiadis, 2010), a full application of the theory with the use of valid measures is still missing. To my knowledge, Greeks' intentions to create or grow a new venture by investing resources that can be directly applied to the venture have not been examined within a solid theoretical framework like the TPB. Thus, the present study adds to theory development by investigating investment intentions, and by exploring the ecological validity of TPB in explaining investment intentions in a national context that has been affected severely by the financial crisis.

For the rest of the paper, the term “*investment*” refers to investments where individuals invest human, social and financial capital in order to participate in the creation or growth process of a venture that they truly believe in, while “*investment intention*” reflects an individual's intention to do so in the future.

### ***5.2.2 Examining main effects***

The TPB (Ajzen, 1991) explains intentions by means of attitudes, subjective norms and perceived behavioural control. Personal (positive/negative) attitudes towards starting a venture or participating in an existing one refer to the degree to which a person holds a favourable/unfavourable evaluation of becoming an entrepreneur (Ajzen, 1991; Kolvereid, 1996b; Ajzen, 2001; Autio *et al.*, 2001). Subjective norms refer to the perceived social pressure of being an entrepreneur (Ajzen, 1991). Subjective norms are internally-controlled by describing the individuals' beliefs about how their close social ties think about them entering entrepreneurship (Ajzen, 2001; Fini *et al.*, 2010). Family, relatives' and/or friends' expectations of and opinions about becoming an entrepreneur or not may influence individuals' intentions to engage in entrepreneurial activities or not (Ajzen and Fishbein, 1980; Liñán and Chen, 2009). Finally, perceived behavioural control refers to the perceived ease/difficulty of performing a given behaviour (Ajzen, 1991). Perceived behavioural control includes individuals' feelings that they have the required capabilities in order to engage in entrepreneurial activities and have high levels

of control over the entrepreneurial process (Liñán and Chen, 2009). Consequently, it is considered as a construct entailing both self-efficacy and control (Ajzen, 2002).

The main assumption of the TPB is that the more positive an individual's evaluations of engaging in entrepreneurial activities are, the more favourable the subjective norm, and the more capable one feels of engaging in entrepreneurial activities, the stronger one's intention to engage in entrepreneurial activities is (Ajzen, 1991). In the investment context this may suggest that individuals who evaluate their engagement in investment activities positively, in other words, individuals who link investments with positive outcomes, will be more likely to intend to engage in investment activities. Individuals' intentions towards investments may not only be associated with their personal perceptions (i.e. whether they believe that this is a potentially useful investment), but also with the perceptions of their close social circle. The perceptions of various social groups matter to individuals as they place a great value on the opinion of these group members. Individuals whose social circle is positive about their potential to invest their resources in new ventures perceive social pressures to engage in investment activities and, thus, will be more inclined to engage in such activities. Finally, in order to engage in investment activities, individuals have to possess resources that can be directly applied to the venture. Individuals possessing the appropriate resources will not be inclined towards investment, unless they perceive high levels of confidence regarding investing these resources and their ability to engage in investment activities successfully. Consequently, it is expected that individuals who feel confident about their ability to engage in and control investment activities will put more effort into enacting behaviours related to investments. Based on the above analysis, the following hypotheses are formulated:

***Hypothesis 1: Positive attitudes towards investment (a), positive investment subjective norms (b), and perceived behavioural control (c) relate positively to investment intention.***

### ***5.2.3 Examining mediating effects***

Previous research has produced contradictory results regarding the effect of subjective norms on individuals' intentions to engage in entrepreneurial activities. In some studies,

subjective norms were found to relate positively to intentions (Kolvereid, 1996b; Tkachev and Kolvereid, 1999; Lüthje and Franke, 2003; Kolvereid and Isaksen, 2006; van Gelderen *et al.*, 2008; Engle *et al.*, 2010; Liñán *et al.*, 2011c; Moriano *et al.*, 2012; Kautonen *et al.*, 2013; Siu and Lo, 2013), while in other studies this relationship was found to be insignificant (Krueger, 2000; Autio *et al.*, 2001; Wu and Wu, 2008; Liñán and Chen, 2009; Moriano *et al.*, 2012). Also, the strength of the effect of norms on intentions was found to vary depending on the behaviour, the intention of which was under study (Sheppard *et al.*, 1988; Armitage and Conner, 2001). In the entrepreneurship literature, studies have reported a strong (Kolvereid, 1996b; Souitaris *et al.*, 2007; Moriano *et al.*, 2012), but in other cases a rather weak (Engle *et al.*, 2010; Iakovleva *et al.*, 2011; Liñán *et al.*, 2011c; Kautonen *et al.*, 2013) norms-intention relationship in comparison to the attitude-intention and perceived behavioural control intention relationships. The weak relationship between subjective norms and intentions may be explained by the mediating role of attitude and control in this relationship (Liñán and Chen, 2009; Liñán *et al.*, 2011c). Subjective norms may relate to intentions directly and/or indirectly through their relationship with attitudes and perceived behavioural control. In other words, norms seem to function as more distal predictors of intentions, and the effect of norms on intention seems to run through more proximal predictors, such as attitudes and control. Although TPB assumes close interrelations among attitudes, social norms and perceived behavioural control, the direction of the relationships is not stated. This requires other theories that could complement TPB's main assumptions in examining mediating effects.

The theoretical rationale supporting the proposition that attitudes and control mediate the norms-intentions link is grounded in two complementary theories, namely Social Capital theory (Coleman, 1990) and Social Cognitive theory (Bandura, 1986; 1997). Behaviour and the related intention is a construct closely related to individuals' social network (Bandura, 1986). Individuals are bonded with other individuals within their personal network by generating shared norms, values and beliefs (Nahapiet and Ghoshal, 1998). Social norms can inform individuals' attitudes by transmitting specific values that may cause favourable perceptions regarding a given behaviour (Prislin and Wood, 2005). Also, social influences affect individuals' beliefs regarding the positive outcomes of engaging in a given behaviour and shape their personal attitude when

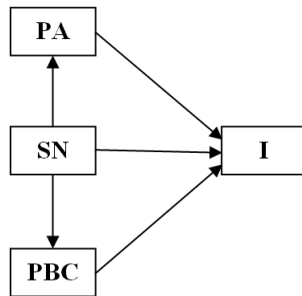
exercising the choice of engaging in that behaviour or not (Coleman, 1987; Coleman, 1990). Therefore, when individuals consider that their close social circle encourages their involvement in a given behaviour (i.e., when subjective norms are positive), a positive personal attitude towards this behaviour is likely to be formed. Social persuasion can also increase individuals' beliefs regarding whether they possess the required human capital in order to engage in a given behaviour (Wood and Bandura, 1989). Considering that Bandura's (1997) self-efficacy is captured in the perceived behavioural control concept proposed by Ajzen (1991), it can be argued that the higher the degree of supportive social norms the greater the individuals' perceived behavioural control.

Previous research has showed that subjective norms relate positively to attitudes and perceived behavioural control (Liñán, 2008) and that attitudes fully mediate the relationship between norms and intentions (do Paço *et al.*, 2011). In countries such as Taiwan or Spain, findings have revealed that the norms-venture creation intention relationship was fully (Liñán and Chen, 2009) or partially (Liñán *et al.*, 2011c) mediated by attitude and perceived behavioural control. It is argued that the same effects may exist regarding investment intentions –and not only venture creation– among Greek potential entrepreneurs. Particularly, positive perceptions regarding investments coming from individuals' close circles will increase their own perceptions that the behaviour will produce positive outcomes, which will eventually lead to positive investment intentions. Similarly, positive encouragement regarding individuals' engagement in investment activities from their close environment will increase their beliefs about their ability to engage successfully in investment activities, which will eventually lead to increased investment intentions. Treating attitude and perceived behavioural control as potential mediators will shed light on why the effects of subjective norms on intentions may occur. The following hypotheses are formulated based on the above analysis (see Figure 1).

***Hypothesis 2:*** *Investment subjective norms relate positively to attitude towards investment (a) and to perceived behavioural control (b).*

**Hypothesis 3:** Attitude towards investment (a) and perceived behavioural control (b) partially mediate the relationship between investment subjective norms and investment intention.

**Figure 5.1 Conceptual Model of multiple mediating effects where PA and PBC function as parallel mediators in the SN–I relationship**



Note. PA=Personal Attitude towards investment, SN= Investment Subjective Norms, PBC= Perceived Behavioural Control, I=Intention

#### 5.2.4 Examining moderating effects

The main and mediating effects suggested within the TPB (Ajzen, 1991) framework are significant in explaining why certain intentions occur. However, these proposed effects do not explain the specific conditions under which intention is more likely to be positive or negative (Conner and McMillan, 1999). In order to address this issue, the TPB can be extended by incorporating possible interaction effects between attitudes, subjective norms, and perceived behavioural control in explaining intentions. Potential moderation effects are of particular theoretical importance, because they indicate under which conditions certain effects hold.

The contingent-consistency approach postulates that the interactive effect of attitude and norms may better predict behaviour over and above their main effects (Acock and DeFleur, 1972; Liska, 1974; Grube *et al.*, 1986; Rabow *et al.*, 1987). In this regard, individuals may not engage in a given behaviour either when holding positive attitudes or experiencing favourable subjective norms but will do so when attitudes and norms are mutually reinforcing (Andrews and Kandel, 1979). It is assumed that a positive attitude will be expressed behaviourally when it is supported by individuals' close social ties (Grube and Morgan, 1990). By incorporating the main assumption of the contingent-consistency approach into the TPB (Ajzen, 1991) and considering that



attitudes and norms influence behaviour only through their impact on intentions (Ajzen and Fishbein, 1980; Bagozzi *et al.*, 1989), it may be argued that the interactive effect of attitude and norms on intentions may also hold (Bagozzi and Schnedlitz, 1985). Outside the entrepreneurial domain, Bansal and Taylor (2002) confirmed the interaction between attitude and norms in predicting customer service provider switching intentions. They showed that positive attitudes exert a positive effect on intentions only when individuals perceive positive subjective norms. Whether the moderating role of subjective norms on the attitude-intention relationship may occur when the behaviour under consideration refers to investments is explored in this study. It is proposed that individuals who have a positive attitude towards investment may form a favourable intention particularly when the investment meets the approval of their close social ties. When the social circle of the potential entrepreneur has a favourable opinion about his or her plans to invest resources, then the entrepreneur's positive attitude towards the investment is more likely to be transformed into intention (Figure 2a). Thus, it is hypothesised that:

***Hypothesis 4:*** *Investment subjective norms moderate the positive relationship between favourable attitude towards investment and intention, in such a way that this positive relationship will be stronger when there is a favourable norm.*

Individuals form intentions to perform a given behaviour when they are capable of performing the behaviour and simultaneously inclined to do so for other reasons (Ajzen and Madden, 1986). In this regard, there is a possibility that perceived behavioural control may interact with subjective norms in predicting intentions (Ajzen, 2002; Fishbein and Ajzen, 2010). Yzer (2007) postulates that the relationship between norms and intention is moderated by the level of control one has over the behaviour. Empirical findings regarding health-related intentions indicate that subjective norms interact with perceived behavioural control in such a way that favourable subjective norms lead to positive intentions particularly under conditions of high perceived behavioural control (Kidwell and Jewell, 2003). Incorporating the proposed interaction between subjective norms and perceived behavioural control into the investment context, it is suggested that potential investors who experience favourable perceptions regarding investment from

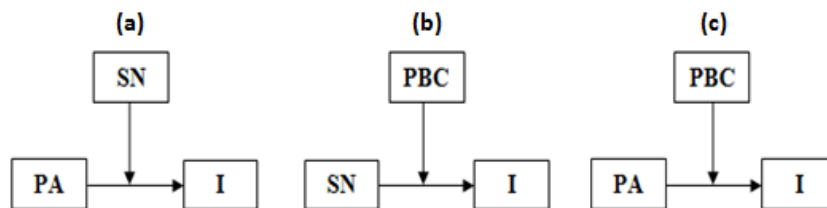
their close social circles are less likely to be inclined towards investment activities, unless they also have a strong sense of control regarding their engagement in investment activities. Put differently, if individuals' perceptions of control are low, then the fact that other people approve of their potential engagement in investment activities may have a weak or no effect on their intentions because individuals do not believe that they will manage irrespective of what other think. In contrast, when perceived behavioural control is high, the positive relationship between favourable norms and intention is likely to be boosted (Figure 2b). On the basis of this analysis, it is hypothesised that:

***Hypothesis 5: Perceived behavioural control moderates the positive relationship between favourable subjective norms and investment intention, in such a way that this positive relationship will be stronger when there is a strong sense of control.***

Eagly and Chaiken (1993) note that individuals intend to engage in a given behaviour by taking into account a conjunction of their own perceptions regarding the behaviour and their ability-controllability to engage in this behaviour. Empirical evidence shows that the interaction effect of attitude and perceived behavioural control on intentions holds in behaviours related to drug use (Conner and McMillan, 1999; McMillan and Conner, 2003; Umeh and Patel, 2004). More specifically, regarding customer service provider switching behaviour, it was found that individuals with positive attitudes obtain high levels of intention towards the behaviour only when they consider that they have the appropriate human capital in order to engage in the specific behaviour and have acquired high levels of control regarding the specific behaviour (Bansal and Taylor, 2002). In the entrepreneurial domain, Fitzsimmons and Douglas (2011) showed that the desire (i.e., positive attitude) to engage in entrepreneurial activities will exert a positive effect on intentions when individuals consider that they have control over the behaviour. On the basis of these results, it can be postulated that a combination of positive attitude towards investment and individuals' strong control over their ability to engage in entrepreneurial activities may result in a stronger intention. In other words, control may moderate the positive relationship between attitude and intention (Figure 2c).

**Hypothesis 6:** Behavioural control moderates the positive relationship between favourable attitudes towards investment and investment intention, in such a way that this positive relationship will be stronger when there is a strong sense of control.

**Figure 5.2 Conceptual Models of two-way interaction of a) PAxSN in investment intentions, b) SNxPBC in investment intentions and c) PAxPBC in investment intentions**

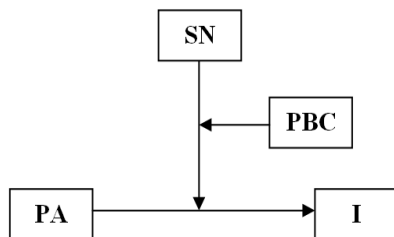


Note. PA=Personal Attitude towards investment, SN= Investment Subjective Norms, PBC= Perceived Behavioural Control, I=Intention

Krueger (2003) argues that the interaction among the three distinct, but interrelated, factors of control, norms and attitudes explaining entrepreneurial intention merits investigation. According to the TPB, intentions are based on attitudes in tandem with norms and control and those intentions appear to be stronger when high levels of control, favourable norms and positive attitudes toward the behaviour co-exist (Ajzen, 1991; Ajzen and Fishbein, 2005; Prislin and Wood, 2005). Based on the above, the positive relationship between individuals' positive attitudes and intention towards entrepreneurship may be stronger when individuals have supportive close ties and high levels of control beliefs. Based on this argument, de Jong (2013) found that attitudes positively relate to high-tech small business owners' decisions to exploit opportunities only when respondents perceive positive subjective norms and have high control. Reformulating de Jong's (2013) hypothesis in the investment context, it is hypothesised that positive perceptions regarding what important others think about engaging in investment activities and high levels of control are preconditions for individuals' attitude towards investment activities to relate positively with investment intentions (Figure 3).

**Hypothesis 7:** Investment subjective norm, investment perceived behavioural control and attitude towards investment interact in explaining investment intention, in such a way that the relationship between positive attitude towards investment and investment intention will be stronger when there is a favourable norm and a strong sense of control.

**Figure 5.3 Conceptual Model of three-way interaction of PAxSNxPBC in investment intentions**



Note. PA=Personal Attitude towards investment, SN= Investment Subjective Norms, PBC= Perceived Behavioural Control, I=Intention

### 5.3 Methodology

#### 5.3.1 Procedure and Participants

The present study was undertaken in Greece during the period November-December 2011. Investment intentions may be generated from individuals of any gender, age and occupational status, as long as they possess diverse forms of capital that can be invested in a new venture or in an existing one. Only individuals with a Greek nationality and residence that have experienced the turbulent economic environment in their country were targeted. The survey was sent via email to 500 professionals and 150 unemployed individuals. The survey link was also posted on various forms of social media. While this gave us the opportunity to attract more participants, it made it impossible to estimate the exact response rate for this study. Participants were invited to complete an online questionnaire. It was clearly stated that participation in the study was anonymous and that participants could withdraw at any time during the study. They were informed about the purpose of the study by clarifying that investment activities refer to investing not exclusively financial capital (money), but also human capital (skills-knowledge) and social capital (access to networks).

At the beginning of the survey, participants were asked whether they had ever invested and/or were still investing their human, social and financial capital in exchange for a stake in a project or a share of the project's revenues. It was clarified that the project could be a new business venture, but it could also be other types of projects (e.g. social entrepreneurship, a company turnaround project etc) that they "truly believed in". Those who replied positively to this question were automatically discarded from the study. This made it possible to concentrate only on those individuals who had never been engaged in investment activities. There are two reasons behind this logic. First, past investment experience could contaminate the results of this study, which focuses on future investment intentions. Secondly, although it is acknowledged that studying investment intentions in a sample of experienced investors is of great value, from a methodological perspective, investment intention would refer to participants' intentions to continue investing, which is beyond the scope of this study.

The final study sample ( $N=203$ ) consisted of 78 males (38%) and 125 (62%) females with a mean age of 33 years ( $SD=8.9$ ). This is rather comparable to the latest census released for publication in Greece indicating that 51% of individuals with a Greek nationality and residence are females (ELSTAT, 2014a). Despite the fact that unemployment in Greece has been escalating, still the persons employed as a percentage of the total labour force in Greece was greater than those who were unemployed (84% employed while the remainder were unemployed) (ELSTAT, 2014b). This is well linked with the occupational status of the participants, where twenty nine percent were unemployed, while the remainder were employed with a mean job tenure of 6.8 years ( $SD=7.6$ ). The vast majority of participants were single (68%), had an annual household income lower than £20,000 (76.4%) and have been negatively affected by the financial crisis in Greece in terms of their work (78.3%) and financial (74.4%) situation. The final sample is indicative of individuals that have felt the social, occupational and financial implications of a turbulent economic environment. Based on the International standard classification of education, approximately 47% of the Greek population between 25-54 years have attained at least an upper and post-secondary education, while 27.5% of individuals hold a first or second stage tertiary degree (EUROSTAT, 2013). This is reflected in the final sample as 79% percent of the participants were highly educated, holding bachelor, masters or PhD degrees.

### 5.3.2 Measures

Attitudes towards investment were measured with the scale developed by van Hooft and de Jong (2009). Items were adapted so as to refer to attitudes toward investment activities as these were described in the Introduction. Participants were asked to rate their level of agreement with the following three statements: “It is wise for me to engage in investment activities”, “It is useful for me to engage in investment activities” and “I think it is interesting to engage in investment activities”. Response options ranged from (1) = strongly disagree to (5) = strongly agree. High scores were indicative of positive attitudes toward investment. The reliability of the scale was very good (Cronbach’s  $\alpha = .93$ ).

Subjective Norms regarding investment were measured with two items adapted from the scale of van Hooft and de Jong (2009), in order to refer to investments (i.e., “The person most important to me thinks that I should engage in investment activities” and “Most people who are important to me think that I should engage in investment activities”). Responses were rated with a scale ranging from (1) = strongly disagree to (5) = strongly agree. High scores were indicative of positive subjective norms toward investment. The reliability coefficient for this scale was  $\alpha = .87$  while the inter-item correlation coefficient was  $r = .78$ .

Perceived Behavioural Control regarding investment was measured with five items based on van Hooft and de Jong’s (2009) scale. The items were adapted so as to refer to perceived behavioural control towards the specific investment that was measured in the study. Two example items are: “Overall, I feel confident about being able to engage in investment activities”, and “Engaging in investment activities is within my personal control”. Response options ranged from (1) = strongly disagree to (5) = strongly agree. High scores were indicative of high levels of perceived behavioural control toward investment. The scale showed good reliability with Cronbach’s  $\alpha = .80$ .

Investment Intention was measured with three items based on previous work by van Hooft and de Jong (2009) and was accordingly adapted so as to refer to participants’ intention regarding investments. Participants were asked to rate their intentions with the following two statements: “I intend to engage in investment activities within the next three months” and, “I expect that I will engage in investment activities in the next three months” (response options ranging from (1) = strongly disagree to (5) = strongly agree).

Participants were also asked to indicate the time that they intend to spend on investment activities with the following question: “How much time do you intend to spend on investment activities during the next three months?” (response options ranging from (1) = no time at all to (5) = very much time). High scores were indicative of positive intentions toward investment. Following van Hooft and de Jong (2009), a total score of these three items was used in order to measure intention. The reliability coefficient for this scale was  $\alpha = .85$ .

### **5.3.3 Strategy of analysis**

Hypotheses were examined by means of hierarchical regression analyses. The required conditions for mediation were examined based on Baron and Kenny’s (1986) propositions. To examine the significance of the hypothesised mediating effects, bootstrap analyses for indirect effects were applied by using the multiple mediation syntax for parallel mediators that has been developed by Preacher and Hayes (2008a). The hypothesised interaction effects were tested in a separate hierarchical regression analysis. In the first step of this analysis the predictor and moderators were entered, followed in the second step by the inclusion of the three pairs of the two-way interaction terms. In the third step of the analysis, the three-way interaction effect was added. Predictor and moderator variables were standardised prior to calculating the cross-product interaction terms. Significant interactions were probed with the simple effects approach, and were plotted by using one standard deviation above and one below the mean of the predictor and moderator variables (Preacher *et al.*, 2006).

## **5.4 Results**

Descriptive statistics in the form of means, standard deviations and correlations between the study variables are presented in Table 1. As the correlations between the study variables were relatively high, a confirmatory (CFA) factor analysis was performed to test whether the data support the distinction of the four factors that were tested. Factor analysis was appropriate for the specific data set as Kaiser-Meyer-Olkin (KMO) statistics fall into the range .8 to .9 (KMO=.88) and Barlett’s test of Sphericity is highly significant ( $p = .000$ ). Table 2 shows that the factor analysis resulted in four distinct factors, as expected. The ‘attitudes towards investment’ factor explained 18% of the

total variance, the ‘subjective norms’ factor explained 12% of the total variance, the ‘perceived behavioural control’ factor explained 19% of the total variance, while the ‘investment intention’ factor explained 16% of the total variance. Thus, despite the high inter-correlations between the study variables, these results support a clear factor solution and suggest that there is no significant overlap between the factors under study. Finally, none of the four factors explain the majority of the total variance (66%), suggesting that common method bias is not considered as a significant problem for this study.

**Table 5.1 Means, standard deviations, and correlations (N=203)**

	Mean	SD	1	2	3	4
1 Personal Attitude towards investment	3.55	.84	-			
2 Investment Subjective Norms	3.34	.95	.68***	-		
3 Perceived Behavioural Control	3.37	.63	.50***	.44***	-	
4 Investment Intention	2.85	.62	.64***	.56***	.49***	-

Note. \*\*\* p < .001

**Table 5.2 Results of confirmatory factor analyses: Factor loadings (N=203)**

	Factors			
	1	2	3	4
PA1		.739		
PA2		.807		
PA3		.731		
SN1				.760
SN2				.740
PBC1	.678			
PBC2	.649			
PBC3	.707			
PBC4	.441			
PBC5	.687			
Intention1			.742	
Intention2			.881	
Intention3			.515	

Note. Values below .40 are not presented; PA=Personal Attitude towards investment, SN= Investment Subjective Norms, PBC= Perceived Behavioural Control towards investment

According to Hypothesis 1 (a-c), attitude towards investment, investment subjective norm and perceived behavioural control were expected to relate positively to investment intention. Table 3 (Step 2) shows that Hypothesis 1 was supported, since attitudes



towards investment ( $\beta = .42, p < .001$ ), investment subjective norm ( $\beta = .19, p < .05$ ) and perceived behavioural control ( $\beta = .20, p < .01$ ), related positively and significantly to investment intention.

In relation to Hypothesis 2a, results showed that investment subjective norm related positively to attitude towards investment ( $\beta = .68, t = 13.31; p < .001$ ). In a similar vein, investment subjective norm related positively to perceived behavioural control ( $\beta = .44, t = 6.88; p < .001$ ; Hypothesis 2b). With Hypotheses 2a and 2b fully supported it was possible to proceed with the test of the mediating effects of Hypothesis 3. When attitude towards investment and perceived behavioural control were controlled for (see Table 3, Step 1 and 2), the relationship between subjective norms and intentions remained statistically significant, but became weaker (from .56 to .19).

**Table 5.3 Results of hierarchical regression analyses: Test of main effects and indication of mediation effects (N=203)**

		Investment Intentions				
Variables		$\beta$	$t$	$p$	$\Delta R^2$	$\Delta F$
Step	SN	.56	9.52	.000***	.31	90.58***
Step	SN	.19	2.60	.010*	.16	29.41***
	PA	.42	5.57	.000***		
	PBC	.20	3.26	.001**		

Note. PA=Personal Attitude towards investment, SN= Investment Subjective Norms, PBC= Perceived Behavioural Control towards investment; \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$ .

These results indicate a partial mediation, where attitude and perceived behavioural control act as parallel mediators in the relationship between subjective norms and intentions. In order to evaluate the significance of these mediating effects, the bootstrapping model for parallel mediators developed by Preacher and Hayes (2008) was implemented. According to this approach, mediation is supported when confidence intervals do not contain zero. As shown in Table 4, both mediating effects were significant for the 95% confidence intervals. Furthermore, these analyses made it possible to contrast the strength of the two indirect effects (i.e. which mediating effect is stronger). Analyses showed that the two mediating effects varied significantly in terms of their strength (estimate = .19,  $p < .01$ ), suggesting that personal attitudes are stronger mediators than perceived behavioural control in the relationship between subjective

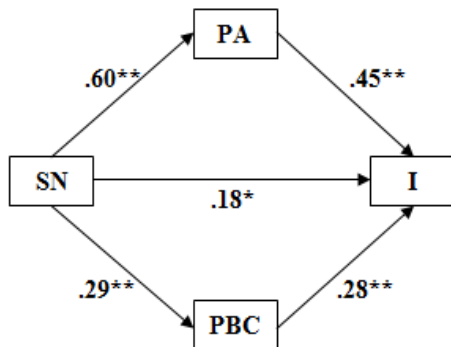
norms and investment intentions. Figure 4 presents the statistically significant standardised coefficients resulting from the bootstrap analyses. All in all, these results fully support Hypothesis 3 (a and b).

**Table 5.4 Total, Direct and Indirect effects in the relationship between subjective norms and investment intentions (N=203)**

	<i>Confidence Interval</i>		
	<i>Total Effect (SE)</i>	<i>Direct Effect (SE)</i>	<i>Indirect Effect (SE)</i>
			<i>95%</i>
<b>SN-I</b>	.544	.182* (.070)	
<b>SN-I via PA (1)</b>			.278*** (.054)
<b>SN-I via PBC (2)</b>			.084** (.028)
<b>Contrast (1) and (2)</b>			.194* (.065)

Note. PA=Personal attitude towards investment, SN= Investment subjective norms PBC= Investment Perceived Behavioural Control, I=Investment intention; \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$

**Figure 5.4 The hypothesised mediating model and results (standardised coefficient) derived from the bootstrap analysis for parallel mediating Effects**



Note. All presented relationships are statistically significant; \*  $p < .05$ , \*\*  $p < .01$  PA=Personal Attitude towards investment, SN= Investment Subjective Norms, PBC= Perceived Behavioural Control towards investment, I=Investment Intention

Table 5 presents the results regarding Hypotheses 4 to 7. Hypotheses 4, 5 and 6 were rejected, since none of the three two-way interaction effects were found to be significant. However, as Table 5 shows, the three-way interaction effect was significant. In other words, personal attitude towards investment interacted with investment

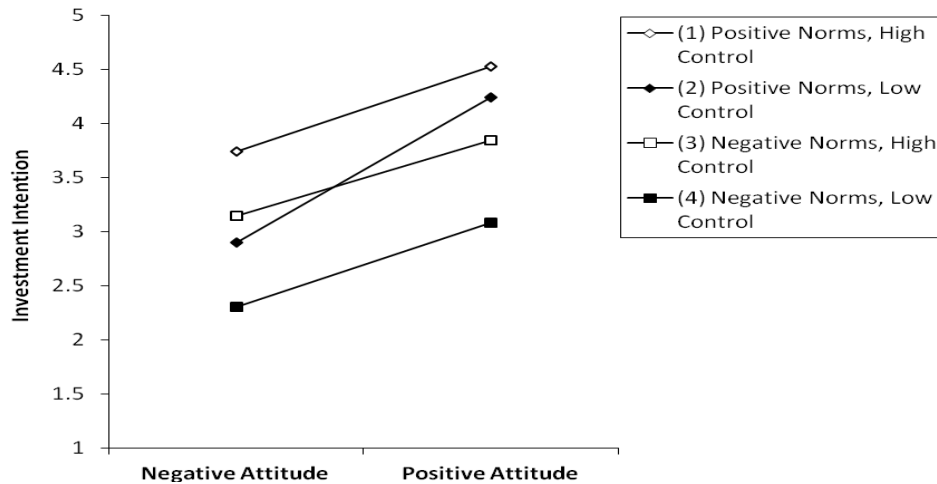
subjective norms and perceived behavioural control in explaining investment intention ( $\beta = -.20, p < .05$ ). This interaction effect is depicted in Figure 5. Results of the simple slopes test showed that the only significant slope was that of positive subjective norms and low control (estimate = .67,  $t = 1.96, p = .05$ ), while none of the other slopes were statistically significant (for positive norms/high control: estimate = .38,  $t = 1.18, ns$ ; for negative norms/high control: estimate = .35,  $t = 1.08, ns$ ; and for negative norms/low control: estimate = .41,  $t = 1.22, ns$ ). These results suggest that attitudes relate positively to investment intention, particularly in conditions of positive subjective norms and low control. Thus, Hypothesis 7 was rejected.

**Table 5.5 Results of hierarchical moderated regression analyses: Main and interaction effects (N=203)**

Step	Variables	Investment Intention			
		$\beta$	$t$	$\Delta R^2$	$\Delta F$
1	PA	.42*	5.57	.47	58.34***
	SN	.19***	2.60		
	PBC	.20**	3.26		
2	PA	.45***	5.76	.01	.84
	SN	.32	.68		
	PBC	.27	.82		
	PAxSN	.12	1.57		
	SNxPBC	-.20	-.31		
	PAxPBC	-.04	-.32		
3	PA	.49***	6.14	.01	4.93*
	SN	.41	.86		
	PBC	.36	1.12		
	PAxSN	.12	1.66		
	SNxPBC	-.27	-.42		
	PAxPBC	-.13	-.10		
	PAxSNxPBC	-.20*	-2.22		

Note. PA=Personal attitude towards investment, SN= Investment subjective norms PBC= Investment Perceived Behavioural Control; \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$

**Figure 5.5 Investment intention: The interaction between attitude toward investment, subjective norms and perceived behavioural control**



Note. Only the slope of positive norms and low control is significant.

#### 5.4.1 Additional analyses

Krueger *et al.* (2000) argue that demographic and situational variables have a small explanatory validity and predictive power on entrepreneurial intentions. Additional analyses were performed to test the study hypotheses by controlling for demographics (i.e., gender, age, marital status, educational level, employment status and job tenure). Results showed that only employment status and job tenure related positively to investment intentions. Nevertheless, the inclusion of these variables in the models did not lead to diverse results regarding the hypothesised effects.

### 5.5 Discussion

The objective of this study was to better understand entrepreneurial investment intentions by applying the TPB (Ajzen, 1991). This study has complemented previous research on entrepreneurial intentions by focusing on entrepreneurial activities related to the investment of resources and not idea generation. Further, it adds to the ecological validity of the TPB, by testing, for the first time to my knowledge, its applicability regarding investment intentions using a Greek sample. Positive attitudes, favourable subjective norms and perceived behavioural control were found to relate positively to intentions to invest diverse forms of capital (human, social and financial), in order to act

entrepreneurially either by creating new or growing existing ventures. It has also tested possible mediating and moderated effects and how these may explain investment intentions over and above the main effects proposed. Findings suggest that the direct relationship between norms and intentions is partly explained by the norms-attitude and norms-control relationships. In addition, the study contributes to the better understanding of investment intentions, by providing evidence regarding the moderating role of norms, attitudes and control. The investors' positive attitude towards entrepreneurship relates to high investment intention, particularly when they have favourable investment subjective norms and low investment perceived behavioural control. The analysis of the factors that lead to investment intention by applying TPB, the reasons why certain relationships hold and when these may hold, provides a more in depth analysis of the psychological processes that explain intentions to engage in investment activities.

### ***5.5.1 The main effects***

The findings of the study have confirmed the main assumptions of the TPB (Ajzen, 1991) in explaining investment intentions. Individuals' intentions to act entrepreneurially by investing certain resources that can be directly applied to the venture (investors acting as entrepreneurs) are positively associated with a) their own considerations regarding investments, b) their considerations about what their social environment thinks about them engaging in investments and c) their level of self-efficacy combined with their ability to take control over investment situations. This is in line with previous research (Carr and Sequeira, 2007; Souitaris *et al.*, 2007; Wu and Wu, 2008; Iakovleva *et al.*, 2011; Liñán *et al.*, 2011c; Guzmán-Alfonso and Guzmán-Cuevas, 2012; Obschonka *et al.*, 2012; Solesvik, 2013b) on individuals' intentions to act entrepreneurially by exploiting a new business idea (entrepreneurs). These studies indicate that individuals with a positive attitude towards entrepreneurship, favourable subjective norms and high levels of perceived behavioural control have higher intentions towards entrepreneurship. Attitudes may reflect affective considerations about positive or negative feelings derived from being an entrepreneur, but also evaluative considerations about the perceived costs and benefits of being an entrepreneur (de Jong, 2013). On this basis, the more general concept of the individual's

affective considerations may encompass evaluative considerations, where perceived benefits are related to individuals' motivation. Findings of this study could supplement previous research indicating that the attitude-intention relationship holds when attitude is solely measured as individuals' evaluative considerations in the form of a variety of intrinsic and extrinsic motives (Kolvereid, 1996b; Tkachev and Kolvereid, 1999; van Gelderen *et al.*, 2008; Díaz-García and Jiménez-Moreno, 2010; Kautonen *et al.*, 2010; Yordanova and Tarrazon, 2010; Kautonen *et al.*, 2011; Kautonen *et al.*, 2013; Kibler, 2013). In addition, considering that perceived behavioural control was measured as a construct incorporating both self-efficacy and control, the findings of this study supplement previous research that demonstrates the significant relationship between perceived behavioural control and intention, when perceived behavioural control is measured only as self-efficacy (Krueger, 2000; Engle *et al.*, 2010; Moriano *et al.*, 2012; Siu and Lo, 2013). These suggest that individuals' intentions to create or grow a venture, either by exploiting a new business idea (entrepreneurs) or by possessing certain resources that can be directly applied to the venture (investors), are influenced by the same psychological factors as proposed by the TPB (Ajzen, 1991). In other words, these results add to the ecological validity of the main tenets of TPB.

### ***5.5.2 The mediating effects***

In the Greek context, where the culture is considered to be a collectivistic one (Hofstede, 1980), it was not surprising to find a relationship between subjective norms and investment intention. Evidence from this study suggests that Greeks comply with the expectations of their close social circle when they are confronted with the decision to engage in investment activities or not. Personal attitudes and perceived behavioural control are also the linking mechanism between norms and intentions. Individuals' intentions tend to be heavily associated with others' positive opinions regarding specific behaviours and consequently these opinions relate positively to individuals' perceptions regarding the specific behaviour and their ability to control the given behaviour.

The findings of this study are in line with previous research about entrepreneurs, which has demonstrated a positive relationship between subjective norms and attitude towards entrepreneurship (Liñán, 2008; Liñán and Chen, 2009; do Paço *et al.*, 2011; Liñán *et al.*, 2011c) or subjective norms and perceived behavioural control (Autio *et al.*,

2001; Liñán, 2008; Liñán and Chen, 2009; Liñán *et al.*, 2011c). Particularly, in collectivistic cultures like Spain and Taiwan, studies show that norms are not directly related to venture creation intentions, but are indirectly associated with intentions via attitudes and control (Liñán and Chen, 2009; Liñán *et al.*, 2011c). This indicative full mediating effect of attitude and perceived behavioural control on the subjective norms-intention relationship may explain why in previous research the relationship between subjective norms and intention has been found to be insignificant in such collectivistic cultures as Iran and China (Wu and Wu, 2008; Moriano *et al.*, 2012). This work supplements previous studies (Liñán and Chen, 2009; Liñán *et al.*, 2011c) by providing evidence regarding the mediating role of attitudes and control on the norms-intention relationship, when the behaviour under consideration refers to acting entrepreneurially by engaging in investment activities. More specifically, the partial mediating role of attitude and perceived behavioural control regarding investments intentions in Greece implies that a relationship between subjective norms and investment intentions is still present and that personal attitude is a stronger mediator than perceived behavioural control.

Armitage and Conner's (2001) meta-analysis indicates that the subjective norms-intention relationship is significantly weaker than the attitude-intention and perceived behavioural control-intention relationships. When the focus turns to collectivistic cultures solely, decisions are primarily based on individuals' collective-self, instead of a private-self, and therefore norms are expected to exert a greater impact on intentions than attitudes (Triandis, 1989; Ybarra and Trafimow, 1998; Siu and Lo, 2013). The findings of this study are in line with the concluding remarks of Armitage and Conner (2001) and contrast with previous research on collectivistic cultures. Attitude and perceived behavioural control are only phenomenologically the more proximal antecedents of investment intentions, because the norms-intention relationship is mediated by these antecedents. It may be argued that this is the reason why the norms-intention relationship appears to be weaker in a collectivistic culture such as Greece. Moreover, the weak relationship between subjective norms and investment intentions can be better explained by the mediating role of personal attitude than the mediating role of perceived behavioural control. In this regard, individuals' investment intentions will be mostly influenced by their own perceptions regarding investments activities

which are formed as a consequence of the encouragement that they receive from their close social circles.

### *5.5.3 The moderating effects*

In order to deepen the understanding regarding the effects of individuals' subjective norms on their intentions towards investment, whether all three core antecedents (i.e., positive attitudes, favourable norms and high levels of control) have to be present in order for a strong intention to occur was explored. To this end, possible 2-way and 3-way interaction effects between the core antecedents were explored in order to explain under which particular conditions intention is highest. In contrast to previous studies that found significant interaction effects between attitude and control on students' intentions to create a new venture (Fitzsimmons and Douglas, 2011), in this study none of the two-way interaction effects were significant, which is, however, in line with previous research on opportunity exploitation (de Jong, 2013).

A possible explanation for these non-significant findings is that the three-way interaction was found to explain intentions over and above the two-way interaction effects. Results suggest that attitudes relate positively to investment intention particularly in conditions where subjective norms are positive, but perceived behavioural control is low. This unexpected finding is in contrast with previous research in the entrepreneurial domain regarding the decision to exploit opportunities for innovation. In particular, de Jong's (2013) empirical findings regarding the significant three-way interaction among the core antecedents of the TPB indicate that small-business owners' decisions to exploit opportunities for innovation were stronger when positive attitudes interacted with favourable norms and high levels of control. Eagly and Chaiken's (1993) suggestion that strong intentions are not always formed when perceived behavioural control is high may explain the different findings to those of de Jong (2013). Considering that intentions are not only influenced by perceived behavioural control, but also by additional factors such as attitude and norms, these other factors may be responsible for the fact that different perceptions of behavioural control may have equally strong intentions (Ajzen, 1991).

From a theoretical point of view, the findings of this study are in line with the resource substitution hypothesis, which suggests that when a given resource is absent or



inadequate, a second resource may substitute for this loss and act in its place (Hobfoll and Leiberman, 1987; Hobfoll and Lilly, 1993). Following Hobfoll's (2002, 2004) categorisation of resources, one may consider high levels of perceived control as a type of personal resource (e.g., self-efficacy), while favourable subjective norms may be seen as a type of social resource (i.e., support toward a goal). Based on the substitution hypothesis it may be argued that even when control is low, intentions can be high because individuals' limited ability to control investment activities has been substituted by their favourable subjective norms and their positive perceptions towards investments. Individuals may intend to act entrepreneurially by engaging in investment activities not necessary in conditions where all core antecedents are high, as the positive influence of one antecedent on intentions may cover the loss of another.

Another explanation for the direction of the significant three-way interaction effect may have to do with the specific context in which the study took place, namely Greece during times of financial crisis. The austerity measures have made a deep and lasting impact on the psychology and morale of Greeks. Perceived behavioural control does not measure the level of human capital that individuals possess, but the level of confidence that individuals have acquired regarding their human capital and their ability to control the environment. In the 25-34 year-old population in Greece, secondary graduation rates are equal to or above 90% while upper secondary education rates are approximately 80% (OECD, 2011b). Although Greeks may possess skills, just as was the case with the specific sample in this study, which was a highly educated one, they may experience negative feelings related to their ability to utilise their human capital. What is more, the financial crisis may have created feelings of low controllability. With the wide-spread pessimistic atmosphere in the country regarding personal and national prospects, it is not surprising to find that low perceived behavioural control is substituted by positive attitudes and social norms, which eventually still leads to high levels of investment intentions.

## **5.6 Practical implications**

This study suggests that without the necessary resources invested in an idea, ideas by themselves cannot suffice when it comes to creating new value. In a turbulent environment characterised by high levels of uncertainty, such as the Greek one,

understanding what encourages investment is of great significance as it can be a catalytic growth factor. Consequently, the findings of this study have practical implications for policy makers, who need to come up with ways of positively influencing social norms and attitudes towards entrepreneurship on a macro level and control at the individual level. In Greece, pursuing profit can often be perceived negatively, which in turn affects intentions to invest or act entrepreneurially more generally. When it comes to control, schemes like business accelerators or social enterprises could play a more holistic role, by not just considering individual control. Instead, they could facilitate the formation of managerial teams that address human capital shortages by bringing together entrepreneurs and investors (Papagiannidis *et al.*, 2009). Such relationship building within the context of a collectivistic society can place stakeholders within an environment that reinforces entrepreneurial attitudes, which in turn can have a positive effect on intentions. The above could potentially apply to less-collectivistic societies that face similar market conditions.

### **5.7 Limitations and Future Research**

There are certain limitations with regard to this study that need to be discussed. This study was based on a self-reported questionnaire and resulted in relatively high correlations between the study variables (see Table 1), which raised concerns regarding common method variance (Lindell and Whitney, 2001). Considering that the main findings of this study are consistent with the proposed theoretical assumptions and that common method variance is more likely to attenuate rather than to inflate interaction effects (Evans, 1985), one can be confident that this is not a substantial problem in this study. In addition, the results of the factor analyses suggested that there is no substantial overlap among the study variables, while there is no significant factor that accounts for the majority of variance (Podsakoff *et al.*, 2003). What is more, Spector (2006) has argued that the common method variance problem and its effects on the correlations among the study variables have been exaggerated. Another limitation is the relatively small sample size, which is not representative of the Greek population. However, the main purpose of this study was to understand the psychological processes that explain investment intentionality, for which generalisable samples are not necessary. Nevertheless, future studies are needed that could replicate these findings with larger

and more heterogeneous samples (and also in other countries) in order to shed additional light on investment intentionality and further generalise the study findings.

Only attitude and perceived behavioural control were examined as mediators in the relationship between subjective norms and intentions. Further research could examine other possible mediating effects, based on ground theories that could complement and extend the TPB. For instance, future research is needed in order to evaluate the mediating role of attitudes in the relationship between individuals' available human, social, financial capital and intentions (Ajzen and Fishbein, 1980; Shapero and Sokol, 1982; Ajzen, 2002; Jack and Anderson, 2002; Ajzen and Fishbein, 2005; Kim *et al.*, 2006) in the investment context. The injunctive components of subjective norms were included in this study. Considering that subjective norms may encompass injunctive and descriptive components, individuals' beliefs about the behaviours of others (descriptive norms) may play a greater role than beliefs about the approval or disapproval of others (injunctive norms) (Grube and Morgan, 1990). Future research could examine the role of descriptive norms as an additional predictor in the TPB (Rivis and Sheeran, 2003).

Future research could also explore the same hypotheses regarding the mediating and moderating effects and apply them to different countries. This will make comparison more feasible and will highlight possible differences or similarities under diverse cultural dimensions. The focus is turned on a country with a collectivistic culture, Greece, and assumed the role that culture could play. On this basis future research could undertake self-construal measurements and explore the moderating effect of culture on the subjective norms and investment intention relationship, norms-attitude and norms-perceived behavioural control relationship in the Greek context. This would extend Siu and Lo's (2013) previous research in China indicating that the norm-intention relationship is stronger when norms are favourable and individuals' interdependent self-construal is strong.

Intentions do not immediately lead to action. In other words, having the intention to act entrepreneurially by investing diverse forms of capital does not always mean that an individual will create a new venture or participate in an existing one (Ajzen and Fishbein, 2005). Future research, based on longitudinal designs, could verify the intention-behaviour relationship regarding investment. As intrinsic (success, goal achievement) or extrinsic (wealth, status, social acceptance) motivations may be the

spark that transforms intentions into action (Carsrud and Brännback, 2011) further research is needed regarding the motives that may interact with intentions in predicting such entrepreneurial behaviours as investment. Beyond the exploration of the investment intention-behaviour relationship, the moderating role of investment perceived behavioural control in this relationship (Ajzen and Fishbein, 2005) in future studies is considered to be indispensable.

This study suggests that psychological models such as the Theory of Planned Behaviour can be effectively utilised in order to better understand individuals' intentions to act entrepreneurially by investing diverse forms of capital. Further research that incorporates psychological theories within the entrepreneurial domain, especially by adopting the investors' perspective is needed. The findings of this study may give rise to a series of investigations within the entrepreneurial domain that focus on individuals' investment behaviour in different national contexts and under diverse environmental conditions.

## **5.8 Chapter summary**

The main purpose of this chapter was to study intentions to create new ventures or participate in existing ones by investing available financial and other types of resources. Following the main tenets of the Theory of Planned Behaviour, it was hypothesised that attitude and control over investments mediate the norms-intentions relationship, and that investment intentions are higher in conditions where positive norms and attitudes coexist with high levels of control. Results of bootstrap analyses for indirect effects using a Greek sample confirmed the hypothesised main and mediating effects. Contrary to what was expected, hierarchical regression analyses showed that positive attitudes towards investment boosted investment intentions, particularly in conditions where norms were positive but control was low, suggesting a substitution effect.

Considering that the mediating effects of the Theory of Planned Behaviour are present in the investment context and that the direct link between the availability of capital and investment intentions can be explained by the mediating role of these psychological constructs, it is necessary to examine the process that jointly depicts the role of background and psychological factors in the formation of investment intentions. Based on this argument the following chapter investigates the incorporation of the

Theory of Planned Behaviour in the Entrepreneurial Intentionality Model. In order to better understand investment intentions the role of culture is reconsidered by examining the different paths that Greek vs English nationality individuals follow in order to form investment intentions.

## **Chapter 6. Empirical Study III – Linking individuals' capital to investment intentions in diverse cultural backgrounds: Incorporating the Theory of Planned Behaviour (TPB) in the Entrepreneurial Intentionality Model (EIM)**

### **6.1 Introduction**

New venture formation or growth is a resource-intensive process that is initially linked with the availability of financial capital or access to financial resources. Entrepreneurial activity depends either on family wealth/income and friends' wealth (equity) or on venture capitalists, business angels and financial institution loans (debt) (Bates, 1997), which may affect potential attempts to create or grow a venture (Keister and Moller, 2000). While the first form of financial resources may hinder venture creation but decrease failure, the second one may increase new venture formation but generate more failures (Schwienbacher, 2007). When it comes to young individuals, the likelihood of engaging in entrepreneurial activities may be high in the 25-35 age group (Lévesque and Minniti, 2006), but financial resources remain scarce and financial liquidity in the market is low. In this context, human and social capital may become of higher importance than typically as they cannot be bought from the market and alternative methods of sourcing them are needed.

Based on Sarasvathy's (2001) propositions regarding causation and effectuation processes in entrepreneurship, this study differs from previous studies on entrepreneurial intentions, where potential entrepreneurs typically start the process by generating a new entrepreneurial idea. In contrast, the attention is centred on effectuation processes and entrepreneurship is conceptualised from an investor's perspective. In this regard, the focus turns to "potential investors" by examining the link between human, social and financial capital and investment intention. The main research objective is to understand better what kinds of capital increase the formation of investment intentions and how these forms of capital affect individuals' decisions to engage in investment activities. In order to do so, the psychological antecedents of intentions according to the Theory of Planned Behaviour (TPB) (Ajzen, 1991) are incorporated in Bird's Entrepreneurial intentionality model. In particular, the mediating role of personal attitudes, subjective norms and perceived behavioural control in the

relationship between capital and investment intentions is examined. In this way the aim of this study is to understand the underlying psychological mechanisms that explain investment intentions by going beyond the applicability of the TPB (Ajzen, 1991) and Bird's model (Bird, 1988). By combining the two models into one, evidence regarding the psychological paths that influence the relationship between individuals' levels of capital and investment intentions is provided. In an attempt to gain a more comprehensive picture of the investment context, possible differences in the decision to invest diverse forms of capital among individuals with diverse cultural backgrounds are explored. In order to do so, collectivistic and individualistic cultures are distinguished by focusing on individuals with a Greek and English nationality respectively (Hofstede, 2001).

## **6.2 Literature review**

Previous findings have yielded contradictory results regarding the direct and indirect relationships between diverse forms of capital and entrepreneurial intentions and in some cases have even failed to demonstrate a link without investigating the main reasons for these findings. Particularly, the direct and positive relationship between financial capital in the form of individuals' household income and entrepreneurial intentions has been verified (Evans and Jovanovic, 1989; Cetindamar *et al.*, 2011). In contrast, Arenius and Miniti (2005) argue that the relationship between entrepreneurship and household income can be depicted as a U-shaped curve, where individuals with high income and low income are more inclined towards entrepreneurship than those belonging to the middle income band. These findings are presented without incorporating the psychological variables defined by the TPB in the analysis. This may feed, influence and motivate research, such as the present study, not only in determining, but most importantly in explaining, why the link between financial capital and entrepreneurial intentions is present.

Moreover, by operationalising human capital as individuals' educational level or years in education or work experience, previous studies established the direct relationship between human capital and the likelihood/intent of becoming an entrepreneur (i.e. Robinson and Sexton, 1994; Davidsson and Honig, 2003; Arenius and Miniti, 2005; Kim *et al.*, 2006; Cetindamar *et al.*, 2011). Contrary, Liñán and Chen

(2009) in a broader study on entrepreneurial intentions suggested that human capital in the form of previous working experience is only indirectly linked to entrepreneurial intentions via perceived behavioural control. Research that relates specific skills directly or indirectly to venture creation and growth is scarce. To my knowledge the only exception comes in the light of previous work (Crant, 1996; de Noble *et al.*, 1999; de Clercq and Arenius, 2006) regarding the direct relationship between skills and entrepreneurial intentions. More recently, scholars have provided evidence regarding the positive influence of individual skills (technical, procedural, managerial) on personal attitudes and consequently on intentions to engage in corporate entrepreneurial activities (Fini *et al.*, 2010). Liñán (2008) concluded that the relationship between entrepreneurial skills and start up intentions is fully mediated by the role of positive attitudes, subjective norms and perceived behavioural control. It is considered the more valuable specific components of human capital that can be directly applied to the venture (Haynes, 2003; Gimmon and Levie, 2010) in the form of skills that typically fall into the business and management competences (Man *et al.*, 2002; Mitchelmore and Rowley, 2010) and represent both explicit and tacit knowledge gained through previous education and experience respectively (Becker, 1993). When it comes to venture creation and growth not only do managerial, marketing, financial and technical skills become essential for the accomplishment of the entrepreneurial process (Cooper, 1973; Freel, 1999; Locke, 2000; Baum *et al.*, 2001; Bouwman and Hulsink, 2002), but so do other skills, e.g. related to law and information technology, especially in the new information and technology driven era.

Previous studies have offered support for social capital relating to entrepreneurial intentions by using parsimonious measurements of social capital. Particularly, Cetindamar *et al.* (2011) measured social capital from a family perspective, de Clercq and Arenius (2006) defined the construct as the exposure to knowledge via networks, while Davidsson and Honig (2003) differentiated between bonding and bridging social capital. While the aforementioned studies have established a direct effect of individuals' social capital and entrepreneurial intentions, the mediating role of the TPB antecedents has not been examined. The fact that individuals with broadly established formal and informal relationships may not always extract benefits from these interactions reveals that the size of personal networks alone has little value in determining the role of social



capital in individuals' decisions to engage in entrepreneurship related activities. Therefore, this study is based on a more comprehensive measurement of individuals' social capital that combines bonding and bridging social capital by jointly considering members, frequent contacts, trust relationships, help and benefits. The underlying philosophy for this approach is based on the definitional aspects regarding social capital.

Social capital is defined as the social interactions that individuals enjoy within their social networks (Coleman, 1988; Putman, 1993; Coleman, 1994; Walker *et al.*, 1997; Nahapiet and Ghoshal, 1998). These social relationships that individuals bring to their regular activity are based on trust, generate a mutual willingness to offer help and allow individuals to extract benefits by exchanging or combining tangible and intangible resources via their social networks (Fukuyama, 1995; Portes, 1998; Putnam, 2000; Hardin, 2002; Florin *et al.*, 2003; Ulhøi, 2005; Ferri *et al.*, 2009). Most importantly, scholars (Granovetter, 1985; Patulny and Svendsen, 2007; Bowey and Easton, 2007a; Bowey and Easton, 2007b; Sabatini, 2009) found that these connections are simultaneously generated by homogenous individuals such as family, friends, neighbours (bonding social capital based on strong ties) and heterogeneous individuals through social groups/organisations (bridging social capital based on weak ties).

The value of this study is not limited to the specific measurements of human and social capital and the incorporation of the TPB antecedents that are needed in order to determine and explain the link between capital and intentions. Entrepreneurship is not approached from an idea generation perspective but from the investors' perspective. Understanding the investment context has a particular value, especially when the focus turns on young individuals that may face liquidity constraints due to their young age and early career stage. Firstly, in resource-acquisition strategies required for venture creation and growth, investment activities correspond to larger networks with advanced status and credibility and to better combinations of skills, which may lead to more feasible funding options by attracting, for instance, more venture capitalists (Chandler and Hanks, 1998; Shane and Cable, 1999; Florin *et al.*, 2003; Zacharakis and Shepherd, 2005; Gimmon, 2008). Secondly, engaging in investment activities even by offering limited financial capital contributes to the venture's financial resource pool and creates high levels of financial availability in comparison to the traditional way of doing

business, where an entrepreneur was solely responsible for this process. Finally, bringing skills in-house under non-salary based conditions in order to fill in the skills gap (human capital) and increasing the availability of information and resources through an extended network (social capital) will automatically decrease start-up costs and result in shared risks (which boosts venture creation by avoiding delays or cancellations), eliminate venture failure and enhance chances of survival (Fonseca *et al.*, 2001; Westlund and Bolton, 2003; Papagiannidis and Li, 2005).

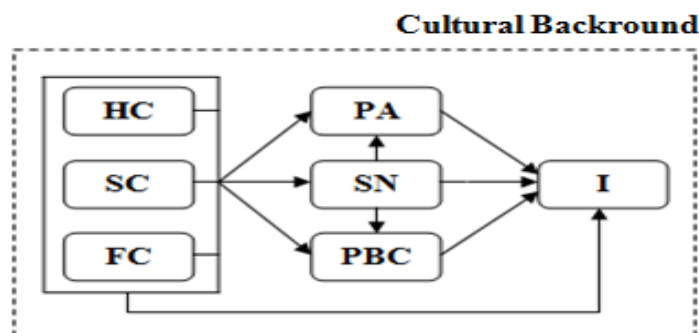
The special value of cultural backgrounds in entrepreneurship is identified. The value of understanding behavioural research by incorporating the role of culture, lies in the nature of individuals' cultural values, which may influence entrepreneurial decisions (Hayton *et al.*, 2002). Determining cultural differences or similarities in the decision about engaging in entrepreneurial activities is crucial not only for the understanding regarding the formation of entrepreneurial intentions but also for policy makers in order to identify which factors affect entrepreneurial activity (Pinillos and Reyes, 2011). Based on previous research suggesting that the most valid, reliable and representative key aspect of culture that determines behaviour is the collectivistic-individualistic dimension (Oyserman *et al.*, 2002; Triandis and Suh, 2002; Schimmack *et al.*, 2005), entrepreneurial activity can be best linked to individuals' collectivistic and individualistic cultural background. The same approach is followed in the investment context. Considering that investment intentions are operationalised as a form of entrepreneurial intentions, the inclusion of cultural influences in this study will highlight whether the proposed differences or similarities in the more general concept of entrepreneurial intentions may appear in the more specific context of investment. Studying the effects of diverse forms of capital on investment intentions by differentiating between individuals' collectivistic and individualistic cultures offers the opportunity to go into more depth and make comparisons more feasible.

### **6.2.1 Theoretical model**

The conceptual model regarding the role of human, social and financial capital in investment intentions is based on Bird's (1998) Entrepreneurial Intentionality Model and Ajzen's (1991) Theory of Planned Behaviour. Following Herron and Sapienz's (1992) proposition that the entrepreneurial process is holistically captured only when

psychological variables are present, Bird's (1998) theoretical assumptions regarding the link between personal factors and intentions are extended by incorporating the core motivational antecedents of intentions, namely personal attitude, subjective norms and perceived behavioural control as proposed in the TPB. Considering that engaging in entrepreneurial activities, such as investment activities, presupposes the possession of human, social and financial capital, the availability of these diverse forms of capital may be conceptualised as individuals' personal factors that form investment intentions. Following Ajzen and Fishbein's (2005) line of argument, the effects of background/personal factors in the form of human, social and financial capital on intentions could be traced to their influence on one or more of the proximal antecedents of intentions. In this regard, the motivational antecedents in the TPB explain intention, whereas other variables would have an indirect effect on intentions (Ajzen, 1991; 2001; 2002). As the indirect effect of capital on investment intentions is determined by individuals' personal attitudes, subjective norms and perceived behavioural control, which are influenced by a wide variety of cultural factors, differences in the proposed relationships are expected between individuals with a collectivistic and individualistic orientation (Markus and Kitayama, 1991; Triandis, 1995; Ajzen and Fishbein, 2005). Figure 1 presents the conceptual model of this study.

**Figure 6.1 Conceptual model based on Entrepreneurial Intentionality Model (Bird, 1988) and Theory of Planned Behaviour (Ajzen, 1991; Ajzen and Fishbein, 2005)**



*Note.* HC= Human Capital, SC= Social Capital, Financial Capital, PA=Personal Attitude, SN= Subjective Norms, PBC= Perceived Behavioural Control, I=Investment Intention, Cultural background= Collectivistic vs Individualistic culture

### ***6.2.2 Applying the Theory of Planned Behaviour in the investments context***

The TPB (Ajzen, 1991) explains intentions by means of personal attitudes, subjective norms and perceived behavioural control. Personal attitudes represent the individual's positive or negative evaluations of engaging in a given behaviour, subjective norms describe the individual's beliefs about how close social ties think about the individual's engagement in the given behaviour, while perceived behavioural control entails individual's feelings related to the possession of the required capabilities, including one's ability to control the environment (self-efficacy) or a given behaviour (controllability) (Ajzen, 1991; 2001; 2002). In particular, the theory assumes that individuals' intentions to engage in a given behaviour are positively influenced by their personal attitudes, subjective norms and perceived behavioural control towards the given behaviour. Based on Coleman's (1990) Social Capital theory and Bandura's (1986, 1997) Social Cognitive theory, positive social influences can simultaneously inform individuals' personal attitudes and perceived behavioural control. Social norms transfer specific values that may cause favourable perceptions regarding a given behaviour (Prislin and Wood, 2005) and increase individuals' beliefs regarding whether they are capable of engaging in a given behaviour (Wood and Bandura, 1989). This signifies that subjective norms positively influence individuals' attitudes and perceived behavioural control, which in turn form intentions towards a given behaviour. In other words, the relationship between favourable subjective norms and intentions is mediated by the role of positive attitudes and favourable perceived behavioural control. By incorporating the main assumptions of the TPB (Ajzen, 1991) in the investment context it is expected that the more positive one's attitude, the more favourable one's subjective norms, and the more constructive one's perceived behavioural control is, the stronger will be one's intention to engage in investment activities. Based on the above argument, it is also anticipated that individuals who consider that their close social circle encourages their involvement in investment activities will have a positive personal attitude and a favourable perceived behavioural control towards investments and are therefore more likely to form strong investment intentions. Therefore, the following hypotheses are formulated:

***Hypothesis 1: Personal attitudes (a), Subjective norms (b) and Perceived behavioural control (c) relate positively to investment intention.***

***Hypothesis 2: Personal attitudes (a) and perceived behavioural control (b) mediate the relationship between subjective norms and investment intentions.***

### ***6.2.3 The relationship between human, social, financial capital and investment intentions***

Bird (1988) in her conceptual model on entrepreneurial intent postulates that the formation of entrepreneurial intentions is influenced directly by individuals' personal factors and the way that these factors interact with someone's rational and intuitive thinking. However, Ajzen and Fishbein (1980) postulated that exogenous factors such as personal factors in the form of competences determine intentions only indirectly via personal attitudes. A few years later, Shapero and Sokol (1982) confirmed that perceived desirability mediates the relationship not only between skills, but also between social and financial aspects and intention. Based on the fact that Shapero and Sokol's (1982) perceived desirability construct is equivalent to Ajzen's (1991) personal attitudes construct (Krueger and Brazeal, 1994), it can be argued that the mediation role of personal attitudes on the influence of individuals' social and financial aspects on intentions is present. Previous research in the entrepreneurial domain has focused on abilities related to human capital components such as skills and examined their influence on entrepreneurial intentions by incorporating the mediating role of psychological constructs. The underlying theorization for the proposed mediating role was based on the positive association of skills with personal attraction, subjective norms and perceived behavioural control (Scherer *et al.*, 1991; Boyd and Vozikis, 1994; de Noble *et al.*, 1999; Liñán and Chen, 2009).

While individuals go through the decision making process regarding a specific goal, in this study this refers to venture creation and growth, by engagement in investment activities, conscious/subconscious knowledge comes into play, where questions regarding the required set of abilities to achieve the given goal come to the forefront (Locke, 2000). Personal abilities are approached as personal factors in a broader sense. In this regard, personal factors can reflect an individual's human context such as the

ability to use developed skills and competences effectively, the sociological context such as the ability to interact with individuals within a family, a community or even an institution efficiently and extract benefits and finally the financial context such as the ability to possess certain financial resources. When it comes to investments, the availability of human, social and financial capital that can be directly applied to the venture are considered as vital abilities that individuals need to encompass in their personal portfolio in order to participate in the venture creation or growth process. The possession of specific abilities in the form of available human, social and financial capital that can be invested in a new or existing venture a) reinforces thoughts that engaging in investment activities is expected to yield positive gains but not exclusively monetary rewards, b) is in line with the close environment's perceptions regarding an individual's decision to engage in the given behaviour and c) is feasible and within their personal control (Bandura, 1977; Gist and Mitchell, 1992; Locke, 2000; Koellinger *et al.*, 2007; Fini *et al.*, 2010; Kobia and Sikalieh, 2010). Therefore, it is hypothesised that the indicated direct influence of personal factors on individuals' entrepreneurial intentions (Bird, 1988), such as investment intentions, is expected to be mediated by personal attitudes, subjective norms and perceived behavioural control (Ajzen and Fishbein, 1980; Ajzen, 2002).

***Hypothesis 3: Personal attitudes (a), Subjective norms (b) and Perceived behavioural control (c) mediate the relationship between human capital and investment intentions.***

***Hypothesis 4: Personal attitudes (a), Subjective norms (b) and Perceived behavioural control (c) mediate the relationship between social capital and investment intentions.***

***Hypothesis 5: Personal attitudes (a), Subjective norms (b) and Perceived behavioural control (c) mediate the relationship between financial capital and investment intentions.***

What is more, the relationship between subjective norms and investment intentions can be mediated by personal attitude and perceived behavioural control, as discussed in the previous section. In this regard, this study explores whether the relationships between capital and investment intentions are mediated first by subjective norms and then by personal attitudes and perceived behavioural control. It is expected that individuals who possess a set of specific skills, who have acquired high levels of bonding and bridging social capital or who have a considerable amount of financial resources will feel that they have the commonly acceptable abilities that are needed in order to engage in investment activities and succeed. These overwhelming or actual feelings will force individuals who possess certain levels of capital to think that their close environment also considers them capable of engaging in investment. Individuals' optimistic thoughts will be translated into positive perceptions regarding what others think about their engagement in investments. The favourable subjective norms will in turn create positive perceptions and high confidence regarding investments (Wood and Bandura, 1989; Prislin and Wood, 2005), which will consequently increase the level of investment intentions (Ajzen, 1991). Based on this argument the following hypotheses are formulated:

***Hypothesis 6:*** *Subjective norms with Personal attitudes in sequence (a) and Subjective norms with Perceived behavioural control in sequence (b) mediate the relationship between human capital and investment intentions.*

***Hypothesis 7:*** *Subjective norms with Personal attitudes in sequence (a) and Subjective norms with Perceived behavioural control in sequence (b) mediate the relationship between social capital and investment intentions.*

***Hypothesis 8:*** *Subjective norms with Personal attitudes in sequence (a) and Subjective norms with Perceived behavioural control in sequence (b) mediate the relationship between financial capital and investment intentions.*

#### **6.2.4 The role of culture**

Culture is the “*man-made part of the human environment*” that distinguishes the members of one country/region/institution from another (Herskovits, 1955; Hofstede, 1980). According to Hofstede (1991) individuals carry specific patterns of thoughts, feelings and actions that have been learned throughout their lifetime. Therefore, humans respond to their environment in accordance to these common patterns identified in their cultural background (Hofstede, 1980). These common characteristics are found in diverse cultural dimensions, where each dimension is related to basic anthropological or social considerations and has distinctive implications for human behaviour (Hofstede and Bond, 1984; Hui and Triandis, 1986; Markus and Kitayama, 1991; Hofstede, 2001). A key dimension of culture that determines behaviour is the degree of individualism or collectivism endorsed by each cultural group (Markus and Kitayama, 1991; Oyserman *et al.*, 2002; Triandis and Suh, 2002; Schimmack *et al.*, 2005). According to Hofstede (1980, 1991, 2001) individualism-collectivism (IND-COL) represents behaviour regulations that express the cultural tendency to place more value either on the self or the group. In this regard, individuals with a collectivistic cultural background feel as if they are an indispensable part of the group, they tend to align their personal interests to the groups’ interests and protect the group that they belong to in exchange for the group's loyalty, while the opposite applies for individuals with an individualistic cultural background, who view themselves as relatively more important counterparts in life than the collective (Hui and Triandis, 1986; Hofstede, 2001).

In the entrepreneurial domain, the IND-COL dimension was used in order to identify whether culture may differentiate entrepreneurial traits, motives, decisions and increase entrepreneurial rates. Some scholars suggested that entrepreneurship is more related to individualistic cultures while others have provided evidence that entrepreneurship is more likely to flourish among individuals with a collectivistic cultural background (McGrath and MacMillan, 1992; McGrath *et al.*, 1992a; McGrath *et al.*, 1992b; Shane, 1992; Baum *et al.*, 1993; Morris *et al.*, 1993; Shane, 1993; Morris *et al.*, 1994; Mitchell *et al.*, 2000; Thomas and Mueller, 2000; Mueller and Thomas, 2001). However, past research highlights a curvilinear relationship with entrepreneurship (Morris *et al.*, 1993; Morris *et al.*, 1994), where entrepreneurship is highest under conditions of balanced IND-COL, and declines in highly individualistic



and more collectivistic environments (Morris *et al.*, 1993). When it comes to cognitive processes in entrepreneurship, and especially entrepreneurial intentions, scholars may have reached an agreement that intentions differ by country due to the involvement of cultural influences but they still debate whether more or less individualistic cultures provide a more conducive environment for the formation of entrepreneurial intentions (Kristiansen and Indarti, 2004; Lee *et al.*, 2006; Nguyen *et al.*, 2009; Pruett *et al.*, 2009; Giacomini *et al.*, 2011; Shneor *et al.*, 2013). The same picture is present when the applicability of TPB is examined in diverse cultural contexts (Engle *et al.*, 2010; Iakovleva *et al.*, 2011; Moriano *et al.*, 2012). Building on Hofstede's (2001, 2013) cultural profile scores, individuals with cultural backgrounds representing the opposite cultural configuration have been selected. In this regard Greek individuals represent a cultural context of collectivistic perceptions that is based on high power distance, masculinity and uncertainty avoidance, while English individuals represent a cultural context of individualistic perceptions characterised by lower power distance, masculinity and uncertainty avoidance (Hofstede, 2001).

As the relationship between culture and entrepreneurship was investigated mainly at the group/organisation and country levels this study examines the role of culture at the individual level (Kirkman *et al.*, 2006). For venture creation and growth it is important to know which factors are related to entrepreneurial activity and how these factors may differentiate between cultures (Pinillos and Reyes, 2011). To my knowledge previous research has not examined the direct and indirect effects of capital on entrepreneurial intentions by contrasting individuals with individualistic and collectivistic cultural backgrounds. While previous research balances between the two main streams of thought, the 'aggregate psychological traits' perspective, assuming that cultures characterised by individualism promote entrepreneurship, and the 'dissatisfaction hypothesis', recognising that collectivistic cultures force entrepreneurial activity (Hofstede *et al.*, 2004), it is not argued that either individualistic or collectivistic cultures are more or less entrepreneurial. In contrast, following Hayton *et al.*'s (2002) proposition a cognitive approach to explore the influence of capital on investment intentions in order to identify schemata and scripts, as proposed by the TPB, which are present or absent within each culture, are adopted. Therefore, the following hypothesis is formulated:

*Hypothesis 9: The influence of capital on the formation of investment intentions will differ among individuals with a collectivistic and individualistic cultural background.*

## **6.3 Methodology**

### **6.3.1 Procedure and Participants**

The present study was conducted in England. The survey was posted online (e.g. on social networking sites) and data was collected via an online questionnaire. From the beginning, participants were clearly informed that investment activities refer to individuals' investment of skills, networks-personal contacts or financial resources in new/existing ventures. The focus is turned only on those participants who reported that they did not have investment experience by the time that the study was conducted, so that the personal characteristics, attitudes and beliefs were not influenced by the event and the data collected were not affected by retrospective bias (Gartner, 1989).

Investment intentions may be generated from individuals of any age (young: 18-38; middle: 39-59; old: 60 and above) who possess skills, access to networks or resources and have the desire to utilise them by participating in the creation of a new venture or in an existing one. This study is interested in young individuals only. Therefore, only those individuals belonging to the 18 to 38 age group were targeted. In order to identify potential differences in the psychological process leading to investment intention formation among young individuals from diverse cultural backgrounds, data were selected from two different groups. The first group refers to individuals with a Greek nationality (collectivistic cultural background) while the second group refers to individuals with an English nationality (individualistic cultural background) (Hofstede, 2001).

In total, 401 individuals took part in the survey and 200 of them matched the initial criteria in terms of previous investment experience, age and nationality. The final study group consisted of 194 individuals (Greek and English) whose mean age was 28 years ( $SD = 5.04$ ). The majority of the participants were women while thirty seven percent were men. Forty two percent of the participants had 10 to 20 years of working experience while 103 participants had never worked. At the time that the survey was conducted, forty six percent of the participants were employed (in paid employment and

in self-employment) with a working average of 17 hours per week ( $SD = 19.14$ ). The rest of the participants were unemployed (54%). Participants were highly educated, with 148 participants holding a university degree.

In the Greek sample (Group 1) the participants' mean age was 30 years ( $SD = 4.74$ ). Sixty four percent of the participants were men while the remaining 63 participants were women. Thirty nine participants had no working experience, while the remaining 60% of the participants had working experience. Fifty four percent of the participants were employed (in paid employment and in self-employment) with a working average of 22 hours per week ( $SD = 21.36$ ) while the remaining 46% of the participants were unemployed. The majority of the participants hold a university degree (81%).

The English participants (Group 2) had a mean age of 26 years ( $SD = 4.24$ ). The majority of the participants were women while 37% were men. Thirty three participants had working experience while 66% of the participants had never worked. Thirty eight percent of the participants were employed (12 hours working average per week;  $SD = 15.03$ ), while the rest of the participants were unemployed (62%). Most of the participants hold a university degree (70%).

### **6.3.2 Measures**

*Human Capital* was measured by means of skills derived from education and experience with two scales, where response options ranged from (1) = No skill to (5) = Advanced skill. Participants were asked to rate their level in six different skills, namely Management, Marketing, Financial, Legal, Technical and IT skills, that they have gained through education (Cronbach's  $\alpha = .74$ ) and working experience (Cronbach's  $\alpha = .72$ ). In order to create a total score for skills that combined skills derived from education and skills derived from experience, principal axis factoring (PAF) analysis was performed with the total scores of these two variables. Analysis resulted in one total factor score for skills, explaining 72% of the total variance.

*Social Capital* measures were adapted from Chen *et al.* (2009) by means of two scales regarding bonding and bridging social capital. *Bonding Social Capital* was measured by five scales. The first four scales measured members within the social circle (Cronbach's  $\alpha = .70$ ), contacts with the members of the social circle (Cronbach's  $\alpha = .67$ ), trust in the members of the social circle (Cronbach's  $\alpha = .75$ ), help gained from members

within the social circle (Cronbach's  $\alpha=.77$ ). The six items used for these scales were related to "Family members", "Relatives", "Neighbours", "Friends", "Co-workers/colleagues" and "Old classmates". The last scale regarding bonding social capital measured the level of resources-assets possessed by members of the social circle (Cronbach's  $\alpha=.74$ ). This scale used six items related to resources, namely "Certain political power", "Wealth or owners of an enterprise or company", "Broad connections with others", "High reputation/influential", "High school or more education" and "Professional job". All items of the bonding social capital scales were scored on a five-point Likert-type scale ranging from (1) = many/all to (5) = a few/none. *Bridging Social Capital* was measured by three scales. Contact with groups/organisations was determined by participants' rate regarding how often they participate in activities and events organised by these groups/organisations (Cronbach's  $\alpha=.77$ ). Help from groups/organisations was measured by asking participants to determine which of the five groups and organisations mentioned would help them if asked (Cronbach's  $\alpha=.88$ ). These two scales used five items, namely "Governmental and Political", "Economic", "Social", "Cultural" and "Recreational and Leisure". The level of resources-assets possessed by groups/organisations was measured by asking participants to determine how many groups and organisations in the five categories possess the specific assets/resources (Cronbach's  $\alpha=.87$ ). This scale used five items related to the following resources "Significant power for decision making", "Solid financial basis or other resources", "Broad social connections", "Great social influence" and "Skills and knowledge pools". All items of the aforementioned scales were scored on a five-point Likert-type scale ranging from (1) = all/very often to (5) = none/never. The response options have been reverse coded, so that high scores were indicative of high levels of social capital. PAF analysis was performed with the five scales referring to bonding social capital, which resulted in one total bonding social capital factor explaining 36% of the total variance, and PAF analysis with the three scales concerning total bridging social capital, which resulted in one bridging social capital factor explaining 39% of the total variance. The bonding and bridging social capital scales were used in the second PAF analysis, which resulted in one single factor, the total social capital factor, which explained 41% of the total variance.

*Financial Capital* was measured by means of annual household income by asking participants to choose among seven annual income bands (i.e., (1) = Less than £10,000, (2) = £10,000 to £19,999, (3)= £20,000 to £29,999, (4)= £30,000 to £39,999, (5)= £40,000 to £49,999, (6)= £50,000 to £59,999, (7)= £60,000 or more).

*Personal Attitude* towards investment was measured with three items based on the previous work of van Hooft and de Jong (2009) that were accordingly adapted so as to refer to investment activities. Participants were asked to indicate their level of agreement or disagreement regarding the following statements that determine personal attitude: “It is wise for me to engage in investment activities”, “It is useful for me to engage in investment activities” and “I think it is interesting to engage in investment activities”. A five-point Likert-type scale was used with response options ranging from (1) strongly disagree to (5) = strongly agree. The reliability of the scale was excellent (Cronbach’s  $\alpha = .90$ ).

*Subjective Norms* regarding investment were adapted from van Hooft and de Jong (2009). Participants were asked to indicate their level of agreement or disagreement regarding two statements: “The person most important to me thinks that I should engage in investment activities” and “Most people who are important to me think that I should engage in investment activities”. Response options ranged from (1) strongly disagree to (5) = strongly agree. The reliability coefficient for this scale was  $\alpha = .85$ , while the inter-item correlation coefficient was  $r = .74$ .

*Perceived Behavioural Control* towards investment was measured as a construct incorporating both self-efficacy and control. Five items from van Hooft and de Jong (2009) have been accordingly adapted so as to refer to investment activities. Participants were asked to indicate their level of agreement or disagreement regarding the following statements, “Overall I feel confident about being able to engage in investment activities”, “I can overcome any obstacles or problems that could prevent me from engaging in investment activities”, “Engaging in investment activities is within my personal control”, “Engaging in investment activities is easy” and “I think that I possess the abilities that are needed to be able to engage in investment activities”. A five-point Likert-type scale was used with response options ranging from (1) strongly disagree to (5) = strongly agree. The scale showed good reliability with Cronbach’s  $\alpha = .86$ .

*Investment Intentions* were measured with three items adapted from van Hooft and de Jong's (2009) previous work. Participants were asked to rate whether they intend and expect to engage in investment activities within the next three months with the following two statements: "I intend to engage in investment activities within the next three months" and "I expect that I will engage in investment activities in the next three months". Response options ranged from (1) strongly disagree to (5) = strongly agree. Participants were also asked to indicate the time that they intend to spend on investment activities with the following question: "How much time do you intend to spend on investment activities during the next three months?". The response options for this question ranged from (1) = no time at all to (5) = very much time. A total score of the three items was used in order to measure investment intentions. The scale showed a good reliability coefficient (Cronbach's  $\alpha=.83$ ).

### **6.3.3 Control variables**

The role of gender in performing entrepreneurial behaviours has received a great deal of consideration. Challenging the perception that entrepreneurship is "gender blind" (Fagenson, 1993), scholars have argued that male and female entrepreneurs diverge in terms of the likelihood of entering entrepreneurship and the factors that affect their entrepreneurial decisions (Brush, 1992; Gatewood *et al.*, 1995; Arenius and Minniti, 2005; Minniti and Nardone, 2007; Walker and Webster, 2007). Among others, research has focused on background factors (human and social capital) and societal role identification that may differently affect men and women's psychological profile and consequently entrepreneurial choices (Sexton and Bowman-Upton, 1990; Farmer, 1997; Cliff, 1998; Greene, 2000; Verheul *et al.*, 2006). Identifying the role of gender in an entrepreneurial context such as the investment context, this control variable has been included in the analysis. *Gender* was measured with a dummy variable by asking participants to indicate whether they were male or female (1=Male, 2=Female).

Situational factors such as employment status determine individuals' decisions to engage in entrepreneurial activities. From one perspective, unemployed individuals may be inclined towards entrepreneurship as alternative occupational choices do not exist (Storey, 1991; Ritsilä and Tervo, 2002). From another perspective, employed individuals may also have a high propensity to enter entrepreneurship due to potential

job dissatisfaction (Arenius and Minniti, 2005; Kirkwood, 2009a). Krueger *et al.* (2000) argued that employment status variables alone are poor predictors of entrepreneurial intentions and that other psychologically based models are needed in order to predict entrepreneurial intention. Based on this argument, and on the fact that employment status can be considered an important drive in the decision making process regarding investments, individuals' employment status at the time that the study was conducted was used as a control variable in the analysis. *Current employment status* was measured by asking participants to confirm whether they are in (1) = Paid-employment (2) = Self-employment or whether they are (3) = Unemployed.

Considering that individuals with more working experience in the past may have generated higher levels of human, social and financial capital that may affect their decision to engage in entrepreneurial activities such as investment activities, individuals' career stage has been incorporated in the analysis as an additional control variable. *Career stage* was measured by asking participants to determine in which career stage they are according to their years of employment. Participants had to choose among three career options: (1) = have never worked (e.g. you have been a full time student so far), (2) = Early (up to 10 years of employment) and (3) = Middle (10 years or more, but up to 20 years of employment).

#### ***6.3.4 Strategy of analysis***

Hypotheses for direct and mediating effects were examined by implementing Hayes's (2013) syntax. Particularly, the multiple mediation syntax for parallel mediators (INDIRECT), the multiple mediation syntax for parallel mediators having more than one independent variable (MEDIATE) and the multiple mediation syntax for serial mediators (MED3C) were used. Bootstrap analyses were performed with the inclusion of co-variances and control variables, as indicated in the conceptual model.

## 6.4 Results

Descriptive statistics in the form of means, standard deviations and correlations between the study variables are presented in the following Tables.

**Table 6.1 Means, standard deviations, and correlations between the study variables in the Combined Sample (N= 194)**

	Mean	SD	1	2	3	4	5	6	7	8	9	10
1 Gender	1.64	0.48	-									
2 Career stage	1.52	0.60	.09	-								
3 Employment status	2.50	1.18	-.01	-.51**	-							
4 Human Capital	0.00	0.92	-.20**	.32**	-.06	-						
5 Social Capital	0.00	0.76	.03	-.05	.05	.14	-					
6 Financial Capital	2.71	2.06	.06	.12	-.27**	-.06	.10	-				
7 Personal Attitude	3.21	0.93	-.06	.01	.17*	.35**	.08	-.13	-			
8 Subjective Norms	2.97	0.99	-.04	.19**	.13	.39**	.04	-.23**	.75**	-		
9 Perceived Behavioural Control	2.93	0.75	-.11	.04	.12	.27**	.26**	-.08	.70**	.68**	-	
10 Investment Intention	2.43	0.98	-.10	.11	.20**	.39**	.15*	-.27**	.66**	.75**	.63**	-

*Note.* Combined Sample = Greek and English nationality; \*\*  $p < .01$



**Table 6.2 Means, standard deviations, and correlations between the study variables in Group 1 (N= 97)**

		Mean	SD	1	2	3	4	5	6	7	8	9	10
1	Gender	1.65	0.48	-									
2	Career stage	1.66	0.59	.05	-								
3	Employment status	2.73	1.32	-.00	-.62**	-							
4	Human Capital	0.30	0.76	-.19	.34**	-.13	-						
5	Social Capital	-0.17	0.85	.08	.03	.12	.20*	-					
6	Financial Capital	1.98	1.44	-.04	.30**	-.41**	.06	-.03	-				
7	Personal Attitude	3.67	0.73	.03	-.19	.11	.21*	.15	-.07	-			
8	Subjective Norms	3.59	0.71	.11	-.06	.13	.27**	.19	-.25**	.60**	-		
9	Perceived Behavioural Control	3.21	0.60	-.03	-.09	.17	.18	.36**	-.10	.43**	.50**	-	
10	Investment Intention	3.00	0.90	-.04	-.17	.28**	.19	.35**	-.25*	.62**	.49**	.56**	-

Note. \*\*  $p < .01$

**Table 6.3 Means, standard deviations, and correlations between the study variables in Group 2 (N= 97)**

		Mean	SD	1	2	3	4	5	6	7	8	9	10
1	Gender	1.64	0.48	-									
2	Career stage	1.38	0.57	.13	-								
3	Employment status	2.27	0.96	-.04	-.53**	-							
4	Human Capital	-0.30	0.96	-.23*	.22*	-.15	-						
5	Social Capital	0.17	0.62	-.04	-.05	.08	.27**	-					
6	Financial Capital	3.43	2.33	.13	.18	-.09	.06	.08	-				
7	Personal Attitude	2.76	0.89	-.17	-.07	.06	.18	.32**	.11	-			
8	Subjective Norms	2.36	0.84	-.21*	.16	-.13	.25*	.30**	.12	.70**	-		
9	Perceived Behavioural Control	2.65	0.78	-.19	-.02	-.07	.17	.43**	.13	.77**	.69**	-	
10	Investment Intention	1.86	0.69	-.26**	.15	-.20	.35**	.36**	.03	.46**	.76**	.57**	-

Note. \*\*  $p < .01$

As the correlations between the study variables were relatively high, a factor analysis was performed for all the sample groups in order to test for common method bias. Factor analysis was appropriate for the specific data set as Kaiser-Meyer-Olkin (KMO) statistics fall into the range .8 to .9 (Combined Group KMO =.91; Group 1 KMO =.83; Group 2 KMO =.86) and Barlett’s test of Sphericity is highly significant (Combined Group, Group 1, Group 2  $p = .000$ ). A multigroup CFA was performed by examining all possible combinations of factor loadings. The factor analysis resulted in four distinct factors, as expected by showing that the 4-factor CFA was superior to the three-factor, two-factor and one factor. Despite the high inter-correlations between the study variables, these results support a clear factor solution and suggest that there is no significant overlap between the factors under study. Table 4 presents the percentage of the total variance explained for each variable in the different sample groups. None of the four factors explained the majority of the total variance (Combined Group = 80%; Group 1 = 70%; Group 2 = 87%), suggesting that common method bias is not considered to be a significant problem for this study.

**Table 6.4 Factor analysis: Percentage of total variance**

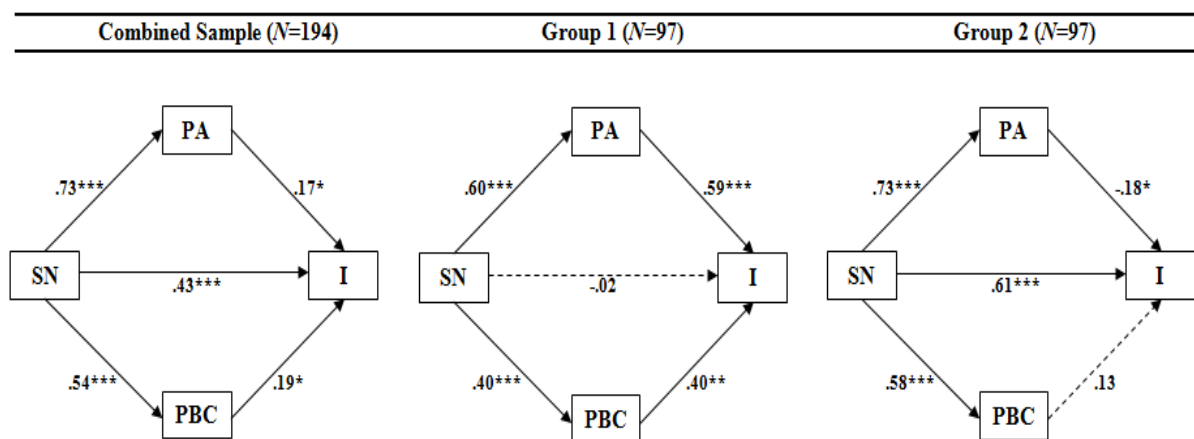
	Percentage of total variance explained		
	Combined Sample ( <i>N</i> =194)	Group 1 ( <i>N</i> =97)	Group 2 ( <i>N</i> =97)
<b>PA</b>	23%	26%	27%
<b>SN</b>	21%	19%	26%
<b>PBC</b>	19%	16%	25%
<b>I</b>	16%	10%	8%

*Note.* Combined Sample = Greek and English nationality; Group 1 = Greek; Group 2 = English nationality; Group 1 = Greek; Group 2 = English nationality; PA=Personal Attitude, SN= Subjective Norms PBC= Perceived Behavioural Control, I=Investment intention

Hypothesis 1 (a-c) concerning the positive effects of personal attitude, subjective norms and perceived behavioural control on investment intentions and Hypothesis 2 (a-b) regarding the mediating role of personal attitudes and perceived behavioural control on the relationship between subjective norms and investment intention were tested by implementing Hayes's (2013) multiple mediation syntax for parallel mediators (INDIRECT). Figure 2 presents the statistically significant and non-significant

standardised coefficients resulting from the bootstrap analyses. Hypothesis 1 was fully supported in the combined sample (personal attitude  $\beta=.17, p<.05$ ; subjective norms  $\beta=.43, p<.001$ ; perceived behavioural control  $\beta=.19, p<.05$ ) and partially confirmed in Groups 1 and 2. Particularly, personal attitudes (Group 1;  $\beta=.59, p<.001$ ) and perceived behavioural control (Group 1;  $\beta=.40, p<.01$ ) had a positive relationship with investment intentions, providing support for Hypothesis 1a and 1c in Group 1. Hypothesis 1b in Group 1 was rejected. Subjective norms (Group 2;  $\beta=.61, p<.001$ ) were positively related to investment intention and therefore Hypothesis 1b was confirmed in Group 2. Hypothesis 1a and 1c in Group 2 was rejected. Figure 2 indicates a partial mediation and a full mediation in the subjective norms – investment intentions relationship for the Combined sample and Group 2 respectively. According to Hayes (2013), significant mediating effects are supported when confidence intervals do not contain zero. Table 5 (Group 2) indicates that the mediating effects of personal attitudes and perceived behavioural control were significant for the 95% confidence intervals. Results fully support Hypothesis 2 (a and b) only in Group 2.

**Figure 6.2 The hypothesised mediating model and results (standardised coefficient) derived from the bootstrap analysis for parallel mediating effects in the relationship between subjective norms and investment intentions**



Note. Combined Sample = Greek and English nationality; Group 1 = Greek; Group 2 = English nationality; Dashed arrows present statistically non-significant relationships; PA=Personal Attitude, SN= Subjective Norms, PBC= Perceived Behavioural Control, I=Investment Intention; \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ ;

**Table 6.5 Total, direct and indirect effects in the relationship between subjective norms and investment intentions**

		<i>Total Effect</i> (SE)	<i>Direct Effect</i> (SE)	<i>Indirect Effect</i> (SE)	<i>Confidence Interval</i> 95%
<b>COMBINED</b>	<b>SN-I</b>	.657*** (.052)	.428*** (.079)		
	<b>SN-I via PA</b>			.123 (.077)	-.020 to .285
	<b>SN-I via PBC</b>			.105 (.056)	-.002 to .220
<b>GROUP 1</b>	<b>SN-I</b>	.501*** (.121)	-.022 (.129)		
	<b>SN-I via PA (1)</b>			<b>.358 (.083)</b>	<b>.214 to .549</b>
	<b>SN-I via PBC</b>			<b>.165 (.084)</b>	<b>.034 to .370</b>
<b>GROUP 2</b>	<b>SN-I</b>	.550*** (.057)	.608*** (.080)		
	<b>SN-I via PA</b>			-.134 (.076)	-.292 to .010
	<b>SN-I via PBC</b>			.077 (.077)	-.061 to .247

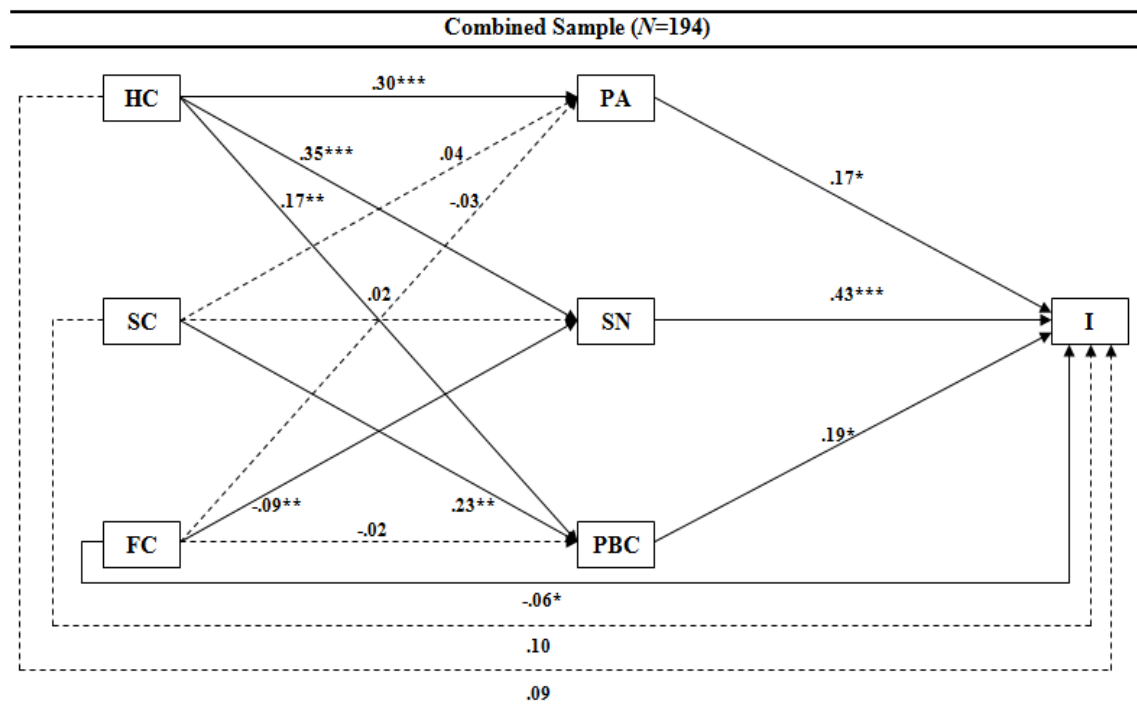
*Note.* Combined Sample = Greek and English nationality; Group 1 = Greek; Group 2 = English nationality; PA=Personal Attitude, SN= Subjective Norms PBC= Perceived Behavioural Control, I=Investment intention; \*\*\*  $p < .001$

Hypotheses 3 (a-c), 4 (a-c) and 5 (a-c) regarding the mediating role of personal attitude, subjective norms and perceived behavioural control on the human capital - investment intention, social capital - investment intention and financial capital - investment intention relationships were tested by implementing Hayes's (2013) multiple mediation syntax for parallel mediators that have more than one independent variable (MEDIATE). According to this approach, mediation is supported when confidence intervals do not contain zero.

Figure 3 (Combined sample) shows the statistically significant and insignificant standardised coefficients resulting from the bootstrap analysis, indicating a full mediation in the relationship between human/social capital and investment intentions and a partial mediation in the relationship between financial capital and investment intentions. As shown in Table 6 (Combined sample), the mediating effects of personal attitude, subjective norm and perceived behavioural control in the relationship between human capital and investment intentions are significant for the 95% confidence

intervals. Hypothesis 3 was fully supported. Results partially support hypotheses 4 and 5. Particularly, Hypothesis 4c regarding the mediating role of perceived behavioural control in the social capital – investment intentions relationship and Hypothesis 5b concerning the mediating role of subjective norms in the financial capital – investment intention are significant for the 95% confidence intervals. However, Hypothesis 4 (a and b) and Hypothesis 5 (a and c) were rejected.

**Figure 6.3 The hypothesised mediating model and results (standardised coefficient) derived from the bootstrap analysis for parallel mediating effects in the relationship between human, social, financial capital and investment intentions (Combined Sample,  $N=194$ )**



*Note.* Combined Sample = Greek and English nationality; Dashed arrows present statistically non-significant relationships; HC= Human Capital, SC= Social Capital, FC= Financial Capital; PA=Personal Attitude, SN= Subjective Norms, PBC= Perceived Behavioural Control, I=Investment Intention; \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ ;

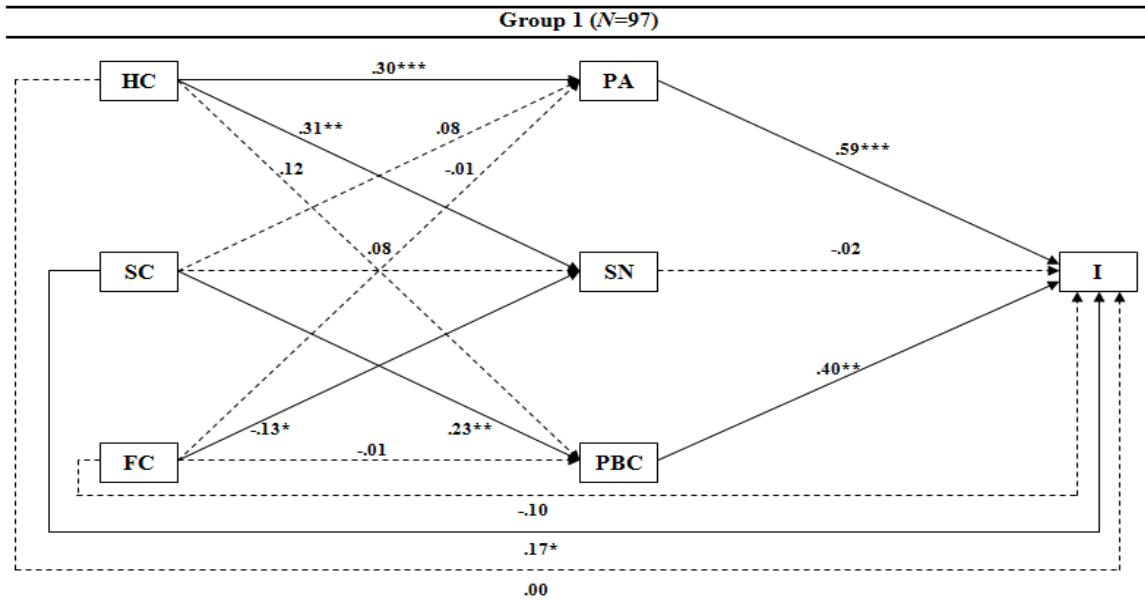
**Table 6.6 Total, direct and indirect effects in the relationship between human, social, financial capital and investment intentions (Combined Sample, N=194)**

<b>Combined Sample (N=194)</b>				
	<i>Total Effect</i>	<i>Direct Effect</i>	<i>Indirect Effect</i>	<i>Confidence Interval</i>
	<i>(SE)</i>	<i>(SE)</i>	<i>(SE)</i>	<i>95%</i>
<b>HC-I</b>	.331 <sup>***</sup> (.075)	.093 (.057)		
<b>HC-I via PA</b>			<b>.055 (.030)</b>	<b>.003 to .120</b>
<b>HC-I via SN</b>			<b>.151 (.044)</b>	<b>.074 to .246</b>
<b>HC-I via PBC</b>			<b>.033 (.020)</b>	<b>.001 to .080</b>
<b>SC-I</b>	.158 (.083)	.099 (.062)		
<b>SC-I via PA</b>			.007 (.016)	-.024 to .044
<b>SC-I via SN</b>			.003 (.037)	-.065 to .082
<b>SC-I via PBC</b>			<b>.045 (.026)</b>	<b>.002 to .103</b>
<b>FC-I</b>	-.105 <sup>**</sup> (.031)	-.058 <sup>*</sup> (.023)		
<b>FC-I via PA</b>			-.005 (.007)	-.021 to .005
<b>FC-I via SN</b>			<b>-.037 (.016)</b>	<b>-.072 to -.009</b>
<b>FC-I via PBC</b>			-.004 (.006)	-.018 to .006

*Note.* Combined Sample = Greek and English nationality; HC= Human Capital, SC= Social Capital, FC= Financial Capital; PA=Personal Attitude, SN= Subjective Norms, PBC= Perceived Behavioural Control, I=Investment Intention; \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Figure 4 (Group 1) presents the statistically significant and non-significant standardised coefficients resulting from the bootstrap analysis, indicating a full and a partial mediation in the human/financial capital - investment intentions relationship and social capital - investment intentions respectively. As indicated in Table 7 (Group 1), the mediating effects of personal attitude in the relationship between human capital and investment intentions (H3a) and perceived behavioural control in the relationship between social capital and investment intentions (H4c) are significant for the 95% confidence intervals. Results partially support hypothesis 3 and 4. However, Hypothesis 5 regarding the mediating role of personal attitudes, subjective norms and perceived behavioural control on the financial capital – investment intentions relationship was rejected.

**Figure 6.4 The hypothesised mediating model and results (standardised coefficient) derived from the bootstrap analysis for parallel mediating effects in the relationship between human, social, financial capital and investment intentions (Group 1, N=97)**



Note. Group 1 = Greek; Dashed arrows present statistically non-significant relationships; HC= Human Capital, SC= Social Capital, FC= Financial Capital; PA=Personal Attitude, SN= Subjective Norms, PBC= Perceived Behavioural Control, I=Investment Intention; \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ ;

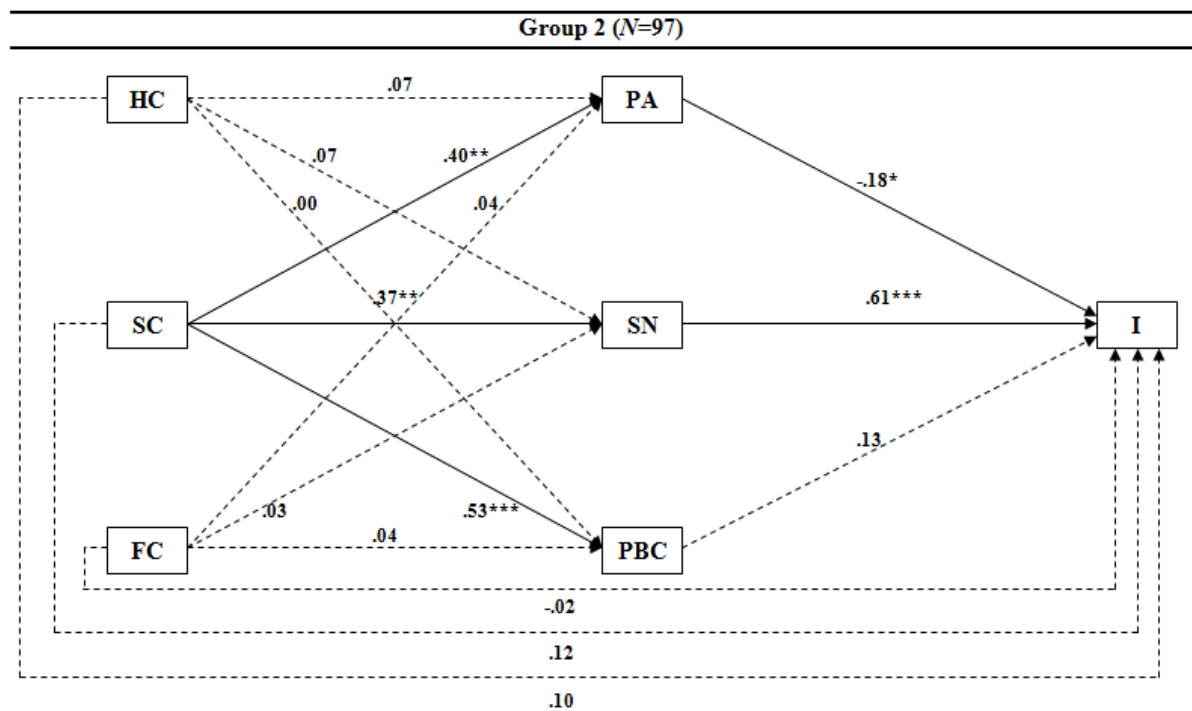
**Table 6.7 Total, direct and indirect effects in the relationship between human, social, financial capital and investment intentions (Group 1, N=97)**

Group 1 (N=97)				
	Total Effect (SE)	Direct Effect (SE)	Indirect Effect (SE)	Confidence Interval 95%
<b>HC-I</b>	.219 (.122)	.000 (.100)		
<b>HC-I via PA</b>			<b>.178 (.072)</b>	<b>.054 to .335</b>
<b>HC-I via SN</b>			-.007 (.042)	-.093 to .078
<b>HC-I via PBC</b>			.048 (.039)	-.017 to .137
<b>SC-I</b>	.308** (.101)	.170* (.082)		
<b>SC-I via PA</b>			.047 (.053)	-.054 to .158
<b>SC-I via SN</b>			-.002 (.015)	-.036 to .029
<b>SC-I via PBC</b>			<b>.092 (.043)</b>	<b>.022 to .187</b>
<b>FC-I</b>	-.104 (.064)	-.097 (.051)		
<b>FC-I via PA</b>			-.004 (.033)	-.071 to .059
<b>FC-I via SN</b>			.003 (.018)	-.034 to .042
<b>FC-I via PBC</b>			-.006 (.019)	-.048 to .031

Note. Group 1 = Greek; HC= Human Capital, SC= Social Capital, FC=Financial Capital; PA=Personal Attitude, SN= Subjective Norms, PBC= Perceived Behavioural Control, I= Investment Intention; \*  $p < .05$ , \*\*  $p < .01$

Figure 5 (Group 2) shows the statistically significant and insignificant standardised coefficients resulting from the bootstrap analysis, indicating a full mediation in the relationship between human/social/financial capital and investment intentions. Table 8 (Group 2) shows that the mediating effect of subjective norms in the relationship between social capital and investment intentions (H4b) is significant for the 95% confidence intervals. While Hypothesis 4 was partially confirmed, Hypotheses 3 and 5 regarding the mediating role of personal attitudes, subjective norms and perceived behavioural control on the relationship between social/financial capital and investment intentions were rejected.

**Figure 6.5 The hypothesised mediating model and results (standardised coefficient) derived from the bootstrap analysis for parallel mediating effects in the relationship between human, social, financial capital and investment intentions (Group 2, N=97)**



Note. Group 2 = English nationality; Dashed arrows present statistically non-significant relationships; HC= Human Capital, SC= Social Capital, FC= Financial Capital; PA=Personal Attitude, SN= Subjective Norms, PBC= Perceived Behavioural Control, I=Investment Intention; \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ ;



**Table 6.8 Total, direct and indirect effects in the relationship between human, social, financial capital and investment intentions (Group 2, N=97)**

<b>Group 2 (N=97)</b>				
	<i>Total Effect</i>	<i>Direct Effect</i>	<i>Indirect Effect</i>	<i>Confidence Interval</i>
	<i>(SE)</i>	<i>(SE)</i>	<i>(SE)</i>	<i>95%</i>
<b>HC-I</b>	.124 (.071)	.096 (.050)		
<b>HC-I via PA</b>			-.013 (.021)	-.061 to .024
<b>HC-I via SN</b>			.042 (.057)	-.068 to .155
<b>HC-I via PBC</b>			-.000 (.013)	-.030 to .028
<b>SC-I</b>	.346** (.104)	.124 (.080)		
<b>SC-I via PA</b>			-.073 (.045)	-.177 to -.003
<b>SC-I via SN</b>			<b>.226 (.089)</b>	<b>.063 to .413</b>
<b>SC-I via PBC</b>			.069 (.055)	-.031 to .184
<b>FC-I</b>	.000 (.027)	-.019 (.019)		
<b>FC-I via PA</b>			-.0082	-.028 to .006
<b>FC-I via SN</b>			.0206	-.022 to .066
<b>FC-I via PBC</b>			.0057	-.004 to .021

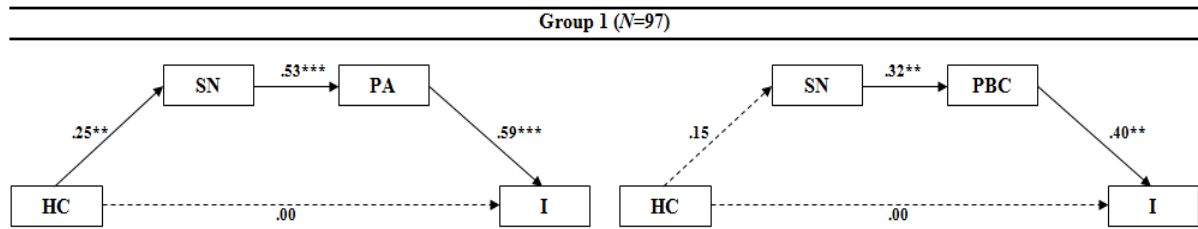
*Note.* Group 2 = English nationality; HC= Human Capital, SC= Social Capital, FC= Financial Capital; PA=Personal Attitude, SN= Subjective Norms, PBC= Perceived Behavioural Control, I=Investment Intention; \*\*  $p < .01$

Based on the fact that the indirect paths SN-PA-I and SN-PBC-I were non-significant in the Combined sample and Group 2 (see Table 5), Hypotheses 6, 7 and 8 could not be tested for these sample groups and were rejected. In Group 1 only human and financial capital had a relationship with subjective norms (see Figure 4). Hypothesis 7 was rejected for Group 1. Therefore, bootstrap analysis was performed only in Group 1 for human and financial capital.

Hypotheses 6 (a and b) and 8 (a and b) regarding the indirect effect of human and financial capital on investment intentions via subjective norms and personal attitude or subjective norms and perceived behavioural were tested by implementing Hayes's (2013) bootstrapping model for serial mediation (MED3C). Figures 6 and 7 present the statistically significant and insignificant standardised coefficients resulting from the bootstrap analyses. Results indicate a full mediating effect in the relationships between human/financial capital and investment intentions. The serial mediation in the relationship between human capital and investment intentions (Table 9) and in the relationship between financial capital and investment intentions (Table 10) was significant for the 95% confidence intervals as the range between the lower and upper

level of confidence intervals did not contain zero values. Hypotheses 6a and 8b were supported while Hypotheses 6b and 8a were rejected.

**Figure 6.6 hypothesised mediating model and results (standardised coefficient) derived from the bootstrap analysis for serial mediating effect in the relationship between human capital and investment intention (Group 1, N=97)**



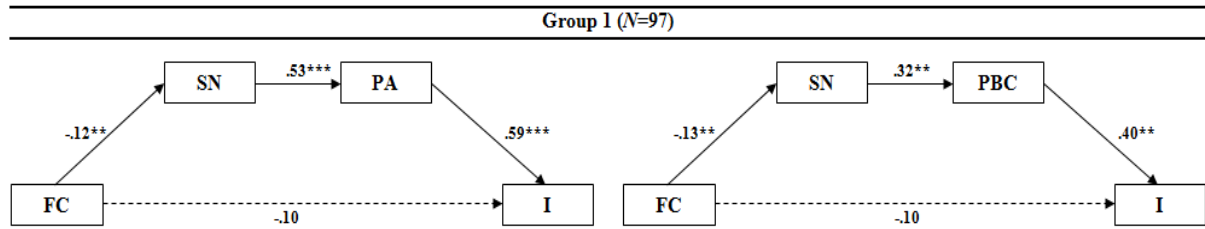
*Note.* Group 1 = Greek; Dashed arrows present statistically non-significant relationships; HC= Human Capital, PA=Personal Attitude, SN= Subjective Norms PBC= Perceived Behavioural Control, I=Investment intention; \*\*  $p < .01$ , \*\*\*  $p < .001$

**Table 6.9 Total, direct and indirect effects in the relationship between human - financial capital and investment intentions (Group 1, N=97)**

	<i>Total Effect</i> (SE)	<i>Direct Effect</i> (SE)	<i>Indirect Effect</i> (SE)	<i>Confidence Interval</i> 95%
<b>HC-I</b>	.139 (.110)	.000 (.010)		
<b>HC-I via SN PA</b>			<b>.077 (.035)</b>	<b>.020 to .158</b>
<b>HC-I</b>	.006 (.102)	.000 (.099)		
<b>HC-I via SN PBC</b>			.020 (.018)	-.001 to .066

*Note.* Group 1 = Greek; HC= Human Capital, PA=Personal Attitude, SN= Subjective Norms PBC= Perceived Behavioural Control, I=Investment intention

**Figure 6.7 Hypothesised mediating model and results (standardised coefficient) derived from the bootstrap analysis for serial mediating effect in the relationship between financial capital and investment intention (Group 1, N=97)**



Note. Group 1 = Greek; Dashed arrows present statistically non-significant relationships; FC= Financial Capital, PA=Personal Attitude, SN= Subjective Norms PBC= Perceived Behavioural Control, I=Investment intention; \*\*  $p < .01$ , \*\*\*  $p < .001$

**Table 6.10 Total, direct and indirect effects in the relationship between financial capital and investment intentions (Group 1, N=97)**

	<i>Total Effect (SE)</i>	<i>Direct Effect (SE)</i>	<i>Indirect Effect (SE)</i>	<i>Confidence Interval 95%</i>
<b>FC-I</b>	-0.095 (.056)	-0.097 (.051)		
<b>FC-I via SN PA</b>			-0.039 (.024)	-0.091 to .002
<b>FC-I</b>	-0.099 (.051)	-0.097 (.051)		
<b>FC-I via SN PBC</b>			<b>-0.017 (.011)</b>	<b>-0.044 to -0.002</b>

Note. Group 1 = Greek; FC= Financial Capital, PA= Personal Attitude, SN= Subjective Norms PBC= Perceived Behavioural Control, I=Investment intention

Table 11 summarises the main significant findings of the main hypothesised effects and shows that Hypothesis 9 regarding differences between individuals with a collectivistic (Group 1) and individualistic cultural background (Group 2) has been fully confirmed.

**Table 6.11 Summary of results: Direct and indirect effects**

Hypotheses	Paths	Combined	Group 1	Group 2
H1a	PA-I	•	•	•(-)
H1b	SN-I	•		•
H1c	PBC-I	•	•	
H2a	SN-PA-I		•	
H2b	SN-PBC-I		•	
H3a	HC-PA-I	•	•	
H3b	HC-SN-I	•		
H3c	HC-PBC-I	•		
H4a	SC-PA-I			
H4b	SC-SN-I			•
H4c	SC-PBC-I	•	•	
H5a	FC-PA-I			
H5b	FC-SN-I	•		
H5c	FC-PBC-I			
H6a	HC-SN-PA-I		•	
H6b	HC-SN-PBC-I			
H7a	SC-SN-PA-I			
H7b	SC-SN-PBC-I			
H8a	FC-SN-PA-I			
H8b	FC-SN-PBC-I		•	

*Note.* Combined Sample = Greek and English nationality; Group 1 = Greek; Group 2 = English nationality; HC= Human Capital, SC= Social Capital, FC= Financial Capital, PA=Personal Attitude, SN= Subjective Norms PBC= Perceived Behavioural Control, I=Investment intention; Cases with dots represent significant paths

## 6.5 Discussion

The main purpose of this study was to investigate the mediating effects of the TPB (Ajzen, 1991) antecedents in the relationship between human, social, financial capital and investment intentions among young individuals that fall into the 18-38 age group. Most importantly, it examined the proposed relationships by differentiating between a collectivistic (Greek) and individualistic (English) culture. In doing so, cultural differences regarding the main assumptions of the TPB (Ajzen, 1991) and the mediating effects between the core antecedents of intentions were initially examined. Subsequently, cultural variations among the direct and indirect effects of capital on investment intentions were examined by incorporating the role of TPB.

### **6.5.1 The Theory of Planned Behaviour in predicting investment intentions**

The findings confirmed the main assumptions of the TPB (Ajzen, 1991) in explaining investment intentions, when young Greek and English individuals were jointly considered in the sample. It was found that young individuals with positive considerations regarding investment activities, supportive close ties and confidence in their ability to perform and control investment activities form higher investment intentions. This is in line with previous research on students in developing and developed countries that provided evidence regarding the positive relationship between personal attitudes, subjective norms perceived behavioural control and entrepreneurial intentions in a joint sample of collectivistic and individualistic cultures (Iakovleva *et al.*, 2011). The results also show that close social ties' positive perceptions influence young individuals' investment intentions only directly without primarily influencing their attitudes or control and afterwards their investment intentions. Based on previous research suggesting differences in the TPB relationships among diverse cultural backgrounds (Markus and Kitayama, 1991; Triandis, 1995), the results were different when young individuals from a collectivistic and individualistic culture were examined separately.

Findings regarding Greeks are in contrast with previous findings on collectivistic cultures such as Bangladesh, China/ Hong-Kong, Costa Rica, Egypt, Ghana and Spain that failed to indicate a link between personal attitude (Engle *et al.*, 2010; Siu and Lo, 2013) or perceived behavioural control (Engle *et al.*, 2010) and students' entrepreneurial intention. Young Greek individuals' investment intentions are formed based on their positive perceptions regarding their engagement in investment activities and their confidence in their abilities to perform investment activities. The vast majority of previous studies have reported a significant relationship (Tkachev and Kolvereid, 1999; Wu and Wu, 2008; Engle *et al.*, 2010; Yordanova and Tarrazon, 2010; Liñán *et al.*, 2011c; Díaz-Casero *et al.*, 2012; Guzmán-Alfonso and Guzmán-Cuevas, 2012; Moriano *et al.*, 2012; Othman and Mansor, 2012; Siu and Lo, 2013; Solesvik, 2013b) and the rest an insignificant relationship (Liñán and Chen, 2009; Liñán *et al.*, 2011c; Moriano *et al.*, 2012; Solesvik *et al.*, 2012) between subjective norms and entrepreneurial intention in a collectivistic cultural background, basically based on student samples. The study provides evidence that young Greeks' investment intentions

are not directly influenced by their close social ties. The insignificant relationship between subjective norms and investment intentions should not be considered evidence inconsistent with the core assumptions of the TPB (Ajzen and Fishbein, 2005). This could be explained by the findings of this study that reflect the mediating role of personal attitude and perceived behavioural control in the relationship between subjective norms and investment intention, which is in line with previous research in the entrepreneurial domain (Liñán, 2008; Liñán and Chen, 2009; Liñán *et al.*, 2011c). This full mediation provides evidence that supportive social circles regarding Greeks' decision to engage in investment activities simultaneously create positive feelings regarding the outcomes that can be gained through the involvement in investment activities and raise the level of confidence in engaging in investment activities, which in turn lead to the formation of higher investment intentions.

The core TPB assumption regarding the positive influence of personal attitudes and perceived behavioural control on intentions has not been confirmed for the English sample. The results show that young English individuals form investment intentions even when they have negative perceptions regarding the outcomes that can be gained through their involvement in investment activities. This contradicts previous research providing evidence regarding the positive relationship between personal attitude and entrepreneurial intentions mostly based on samples from university students in individualistic cultures like Finland (Autio *et al.*, 2001; Engle *et al.*, 2010), Germany, Austria, Liechtenstein and Switzerland (Mueller, 2011; Sommer and Haug, 2011; Goethner *et al.*, 2012; Moriano *et al.*, 2012; Obschonka *et al.*, 2012), Italy (Fini *et al.*, 2010), Netherlands (van Gelderen *et al.*, 2008; Moriano *et al.*, 2012), Norway (Kolvereid, 1996b; Kolvereid and Isaksen, 2006), Poland (Moriano *et al.*, 2012), Sweden (Autio *et al.*, 2001; Engle *et al.*, 2010), UK and France (Autio *et al.*, 2001; Souitaris *et al.*, 2007; Boissin *et al.*, 2009) and finally USA (Krueger *et al.*, 2000; Autio *et al.*, 2001; Boissin *et al.*, 2009; Engle *et al.*, 2010). The significant negative effect of personal attitude on investment intentions may be caused by the high correlations among the TPB constructs. This finding is not in line with the positive correlation between the two variables indicated in Table 3. Therefore the personal attitude – investment intention relationship is a suppression effect, which is considered as an artefact (Ronald Christensen and Friedman, 2006).

Self-confidence regarding the ability to control the investment environment and self-belief in the possession of skills did not lead to the formation of stronger investment intentions for young English individuals. This finding may be in line with previous research in France, Norway, Sweden and USA (Kolvereid and Isaksen, 2006; Boissin *et al.*, 2009; Engle *et al.*, 2010) but contradicts the vast majority of scholars, who report a significant relationship between perceived behavioural control and entrepreneurial intentions mostly among university students in individualistic cultures (Krueger *et al.*, 2000; Autio *et al.*, 2001; Kolvereid and Isaksen, 2006; Carr and Sequeira, 2007; Souitaris *et al.*, 2007; van Gelderen *et al.*, 2008; Boissin *et al.*, 2009; Engle *et al.*, 2010; Fini *et al.*, 2010; Mueller, 2011; Sommer and Haug, 2011; Goethner *et al.*, 2012; Moriano *et al.*, 2012; Obschonka *et al.*, 2012). Given that the behaviour under investigation refers to entrepreneurial intentions in the form of investments and not idea generation, which is the case for the aforementioned studies, it is not surprising to find that a TPB antecedent makes no significant contribution to the prediction of intention (Ajzen and Fishbein, 2005). Moreover, the population under investigation refers to young English individuals characterised not only by an individualistic culture but also by a short term orientation society (Hofstede, 2001). According to this approach, individuals from short-term orientation societies decide to engage in behaviours even if they do not feel comfortable with the main effects of this decision and therefore demand less control over their actions (Hofstede and Minkov, 2010). This may explain why young English individuals' perceived behavioural control was found to have an insignificant link with their intentions to engage in investment activities.

Young English individuals' investment intentions were positively and only directly influenced by the perceptions of their close environment, which is in contrast with previous work in the entrepreneurial domain. In a study among university students in Finland, Sweden, UK and USA Autio *et al.* (2001) found an insignificant link between subjective norms and entrepreneurial intentions and provided evidence that subjective norms influence individuals' personal perceptions and perceived behavioural control. In the same vein, the findings of this study contrast with those of other scholars reporting a non-significant relationship on subjective norms and entrepreneurial intentions based on university students in individualistic countries like France, Germany, Poland and USA (Krueger *et al.*, 2000; Boissin *et al.*, 2009; Moriano *et al.*, 2012) and managing

directors/academic scientists/ entrepreneurs in Germany and Italy (Fini *et al.*, 2010; Sommer and Haug, 2011; Goethner *et al.*, 2012).

### ***6.5.2 The relationship between human, social, financial capital and investment intentions***

The findings of this study indicate that young individuals' availability of human, social and financial capital influences their intention to engage in investment activities when Greeks and the English were jointly considered in the sample. Despite the fact that the direct effects of human capital and social capital on investment intentions were non-significant, an indirect relationship between the study variables still exists. High availability of skills derived either from young individuals' education or experience initially has a positive effect on their perceptions regarding investment activities, their close circle's perceptions regarding their engagement in investment activities and their confidence in their abilities in terms of possessing the required skills and having control over investment activities, which in turn lead to the formation of stronger investment intention. This study extends previous research (Arenius and Minniti, 2005) on a joint sample of collectivistic and individualistic cultures from the Global Entrepreneurship Monitor (GEM) indicating that human capital in the form of individuals' educational level positively influences the likelihood of becoming an entrepreneur without incorporating the mediating effects of the psychological constructs as proposed in the TPB. It does so, by providing evidence that the relationship between human capital and investment intentions is fully mediated by the role of personal attitudes, subjective norms and perceived behavioural control. The positive relationship between skills and perceived behavioural control is in line with and extends previous findings that found a positive relationship between work experience, a proxy of human capital, and entrepreneurial intentions in a joint sample of university students in Spain and Taiwan (Liñán and Chen, 2009). Furthermore, possession of high levels of social capital creates feelings of self-confidence regarding the personal networks that can be brought to the venture and therefore makes young individuals rely more on their ability to control investment related activities. In turn, high levels of perceived behavioural control lead to high levels of investment intentionality. In terms of the effects of financial capital on the formation of investment intentions, the results show that young individuals even



with limited financial resources are willing to participate in investment activities. In this regard, financial capital is not only directly but also indirectly linked to investment intentions. Particularly, even with lower levels of financial capital young individuals form positive perceptions that their close ties support their engagement in investment activities, which in turn positively influences intention to invest their limited financial resources in a venture that they truly believe in. Considering that young individuals are ambitious and often challenge themselves, investing their limited financial resources can be seen as a bridge linking unemployment or low wages to higher expected returns. For those with high levels of financial capital it can be argued that the security plays a crucial role in their decision to engage in investment activities. In this regard, financial barriers may be lower but gains from employment are considered a safer alternative than investments. Individuals perceive risk in a different way. Engagement with investment activities could be perceived as taking risks related to wasting time, which would include the investment of human and social capital, or money. This would encompass the financial capital investments, or even both. Furthermore, the contribution and the weighting in the TPB relationships vary as a function of the populations under investigation (Ajzen, 1991), indicating that cultural dimensions play a role in the link between the three TPB antecedents and the formation of intentions, as discussed above. Therefore, it was not surprising to find inconsistent results regarding the direct and indirect effects of capital on investment intentions when the proposed relationships were examined solely in a collectivistic or individualistic cultural context.

Young Greek individuals' management, marketing, financial, legal, technical and IT skills gained through education or experience act positively and only indirectly influence investment intentions by two distinct psychological processes. This is partially in line with Liñán's (2008) findings suggesting that business students with entrepreneurial skills in Spain from one perspective form positive perceptions regarding venture creation, while from another perspective they consider that their close social circles are supportive. The results of this study among young Greek individuals extend his work by revealing that human capital either influences personal attitudes and in turn investment intentions or influences subjective norms, which influence personal attitudes, which in turn influence investment intentions. In terms of the social capital, this study verifies and extends previous findings postulating that higher levels of social

capital derived from family increase the likelihood of becoming an entrepreneur in Turkey (Cetindamar *et al.*, 2011) by providing evidence that the proposed relationship is partially mediated by the role of perceived behavioural control. Results show that Greeks' personal networks and the benefits that these networks may bring to the venture, in terms of information, have not only a direct but also an indirect effect on the formation of investment intentions. In this sense, higher levels of bonding and bridging social capital make individuals feel more capable of contributing to the venture, which consequently creates stronger investment intentions. In contrast to previous work indicating that individuals in Turkey with household income greater than 1000 It are more likely to engage in entrepreneurial activities than those with lower levels of financial resources (Cetindamar *et al.*, 2011), young Greeks' availability of financial capital was found to influence investment intentions negatively and only indirectly. Greeks with lower levels of household income think that their close ties approve their decision to invest even their limited financial resources in order to upgrade their social and financial status.

Regarding the English sample, results show that young individuals with an English nationality form investment intentions that are indirectly only influenced by their bonding and bridging social capital. This is in contrast to previous research that confirmed the direct influence of personal networks on the formation of entrepreneurial intention in individualistic cultures such as Sweden, Belgium and Finland (Davidsson and Honig, 2003; de Clercq and Arenius, 2006). The psychological process that leads young English individuals to the formation of investment intentions is based on the link between social capital and subjective norms. In this regard the availability of information, which can be gathered through strong (close personal networks) or weak ties (distant networks) and transferred to the venture constructively, creates positive feelings that the decision to engage in investments is fully supported by the social environment, which in turn fosters increased levels of investment intentions. In line with prior work that did not indicate a significant link between individuals' skills (technical, procedural, managerial) and entrepreneurial intentions in Italy (Fini *et al.*, 2010), this study provides evidence that the possession of specific skills derived from education or experience (management, marketing, financial, legal, technical and IT) do not increase young English individuals' investment intentions. Furthermore, the

insignificant relationship between financial capital and investment intentions contradicts previous research indicating that higher levels of financial resources boost the decision to become an entrepreneur in the USA (Evans and Jovanovic, 1989). From one perspective, investing time is considered to be a less risky decision than investing financial capital and from another perspective, investing social capital may require less time than investing human capital. Participating in investment activities by only investing social capital may leave a considerable amount of time to enjoy non-professional life and engage in leisure activities. This is a common characteristic found in individuals from indulgent individualistic cultures, such as the UK, that approach life in an optimistic way and place higher importance on having the opportunity not only to gain money but also to have spare time to spend it (Hofstede, 1980; Hofstede, 2001; Hofstede, 2013). This may explain the insignificant relationship of financial and human capital with investment intentions and why English individuals prefer to invest their close and broad connection in the venture creation or growth process.

In general young Greek individuals are more willing to engage in investment activities as they form strong investment intentions based either on the possession of high levels of human and social capital or on limited financial resources. Young English individuals rely exclusively on their personal networks and the value that can be added to the venture. Social capital is the only form of capital that young English individuals are willing to invest. This contradiction is rooted in individuals' cultural backgrounds. Individuals from diverse cultural backgrounds have different uncertainty avoidance mechanisms (Hofstede, 1980), which may affect their decision about taking specific risks or not. While one would expect that individuals with an individualistic culture characterised by low uncertainty avoidance would be more inclined to invest all forms of capital in contrast to individuals from a collectivistic cultural background fostered by high levels of uncertainty avoidance (Hofstede, 2001), the findings of this study show the opposite. Greeks express high levels of uncertainty avoidance in cases where a given situation or behaviour is characterised by uncertainty. Investment activities may not be considered as such. The investment context which is based on an extensive group is something familiar to Greeks, and it creates feelings of a secure environment. The fact that the group may act as a protective shield allows the engagement in investment activities to be seen as a secure context where individuals are less risk averse and risks

are seen more as opportunities than threats. However, individuals from an individualistic culture fostering independent entrepreneurial activity (Peterson, 1988; Morris *et al.*, 1994) may approach team entrepreneurial activities such as investment activities more guardedly than individuals with collectivistic cultural backgrounds. It is therefore not surprising to find that Greeks are willing to risk all forms of capital that they possess in contrast to the English that participate in new venture creation and growth by investing only social capital.

### ***6.5.3 Theoretical and practical implications***

This work has extended previous research on entrepreneurial intentions by examining the role of capital in the formation of investment intentions. The TPB (Ajzen, 1991) was incorporated in Bird's (1988) conceptualisation regarding the link between individuals' personal factors (in this case these stand for human-social-financial capital) and intentions in order to provide evidence regarding the direct and indirect paths. The findings of this study show that the inclusion of mediating variables in the examination of direct relationships is essential in drawing accurate conclusions regarding the influence of capital on entrepreneurial intentions like investment intentions. In line with Ajzen and colleagues' (1991, 2005) theorisation, findings show that when the psychological constructs and personal factors are simultaneously considered in the formation of intentions, differences in the capital-intention and TPB antecedents-intention relationships are present. From one perspective, the proposed relationships vary across behaviours (entrepreneurial vs investment) but from another perspective, in conditions where the same behaviour is examined the proposed relationships differ as one moves from one population to another (individuals with collectivistic vs. individualistic culture). This indicates the role of culture and may explain the inconsistent findings of previous research in the entrepreneurial domain.

Understanding how investments can be facilitated can be of great practical importance, especially for policy makers. When it comes to venture creation and growth by investing diverse forms of capital, capital and psychological factors jointly influence the formation of investment intentions. In this regard, individuals' availability of capital and psychological constructs should be considered as interrelated factors that jointly determine investment intentions. Policy makers should empower both aspects and find

ways to come up with novel solutions in order to promote entrepreneurship by investing diverse forms of capital in new or existing ventures. For instance, more national and EU funding could be targeted towards cases that encourage entrepreneurial team building. As entrepreneurial teams require fewer financial resources (various forms of capital will be applied to the venture by investing human and social capital) than single entrepreneurs, the same funding could be distributed to more entrepreneurial teams, having a wider impact. Policy interventions could focus both on establishing organisations based on entrepreneurial networks and on investing in training courses in such a way that young individuals may have the opportunity to increase their access to social and human capital by covering all sorts of relationships and knowledge that could be applied to a venture. In the same vein, schemes that encourage investments by promoting the positive outcomes of engaging in investment activities (personal attitudes), recognising the value of close ties' support in the investment process (subjective norms) and build on self-confidence (perceived behavioural control) are essential in creating an investment friendly personal and social climate. Most importantly, policy interventions in promoting investments should reflect diverse cultural backgrounds. While some approaches may focus on collectivistic cultures, some others may target individualistic ones. In this sense, the role of different forms of capital and diverse psychological factors should not be underestimated among individuals with individualistic versus collectivistic cultural backgrounds. What is suggested is that interventions should fit individuals' established societal mores and should be prioritised based on cross-cultural distinctions in multicultural nations such as the UK.

## **6.6 Conclusion**

This study has examined the effect of human social and financial capital on young individuals' intentions to invest in a new or existing venture. The results clearly indicate that diverse forms of capital and TPB psychological constructs simultaneously affecting individuals' investment intentions may differ in individualistic and collectivistic cultures. Particularly, in a combined sample of individuals from individualistic cultures and collectivistic ones results showed that all forms of capital influence the formation of investment intentions. When examined separately, these findings were confirmed only

for Greek individuals, who are characterised by a collectivistic cultural background. However, English individuals, who grew up in an individualistic culture, were willing to invest only social capital. Despite this inconsistency, in both cultural backgrounds investment intentions were present. This suggests that entrepreneurial activities, such as investments, cannot be exclusively based on either the beginning or the end of the ‘aggregate psychological traits perspective - dissatisfaction hypothesis’ continuum (Hofstede *et al.*, 2004). The highlighted difference between individualistic and collectivistic cultures is on the specific forms of capital that individuals choose to invest in order to participate in venture creation or growth processes and how the availability of these forms creates positive attitudes, favourable subjective norms and high levels of perceived behavioural control, which in turn lead to the formation of investment intention.

### **6.7 Limitations and Future research**

Some important implications of this study need to be acknowledged and discussed. The use of a self-reported questionnaire raises concerns regarding common method variance (Lindell and Whitney, 2001; Wunsch *et al.*, 2010). Concerning the common method variance problem and its effect on the correlations among the study variables, Spector (2006) argues that this has been exaggerated. Nevertheless, factor analysis shows that there is no single significant factor that accounts for the majority of variance (see Table 4) despite the fact that some of the study variables were correlated to each other relatively highly (see Table 1-3) (Podsakoff *et al.*, 2003). Therefore, it is considered that common method bias is not a problem in this study. Another limitation of this study is the relatively small sample size. Furthermore, the focus of this investigation was turned to the underlying psychological processes that explain the link between capital and investment intentions and not so much generalising the study findings to representative samples of the two populations. For the above reasons, future studies with larger samples in a regional or national population will play a crucial role in generalising the findings of this study and shedding additional light on the practical applicability of investments.

Findings suggest that individuals from collectivistic cultures that live in England are influenced by ethnic cultural values (Greece). Otherwise, the differences between Greek

and English individuals in the way that they form investment intentions would have been absent. Future research could undertake the same research across diverse multicultural countries such as the USA and highlight possible differences or similarities among individuals with a collectivistic cultural background who live in the USA and show whether cultural values that pre-exist and relate to ethnicity are influenced or not by social values from the “host country”. In this study the focus turns on Greek and English individuals with a collectivistic and individualistic cultural background respectively. The final measurement regarding the individualistic or collectivistic background of individuals with a Greek or English nationality was based on Hofstede’s (2001) work. Considering that cultural dimensions may differ due to environmental influences such as the recent financial recession worldwide, an important limitation of this study is that the cultural background of the participants may have changed during the past years. Future research based on diverse ethnic groups is needed in order to generalise the differences between the two cultural dimensions. Culture was measured as individuals’ self-reported indication of their nationality following Hofstede’s (2013) classification of collectivistic and individualistic nations. According to Triandis (1993) individuals may act collectively or individually even if they have the same ethnic cultural background. In this regard, a self-construal measurement of individuals’ dependent or independent self would enable future studies to mark differences in the same ethnic groups but also extend Siu and Lo’s (2013) work by examining the moderating role of culture in the influence of capital and psychological constructs on investment intentions.

Investment intentions refer to investors and not entrepreneurs who are responsible for idea generation in the entrepreneurial process. Given that investments are part of the entrepreneurial process, examining the conceptual model in the more specific context of investments may act as a proposition regarding the reasons why previous research failed to demonstrate a link between capital and entrepreneurial intentions. In this regard, future research is needed in order to replicate the findings of this study in the broader context of entrepreneurial intentions by concentrating on opportunity identification, evaluation and exploitation of entrepreneurial ideas. In this study, cultural differences between capital and investment intention were explored by incorporating the role of TPB. Considering that having the intention to act entrepreneurially by investing diverse

forms of capital does not immediately lead to investment actions (Ajzen and Fishbein, 2005), future studies could employ a longitudinal research design by examining the moderating role of culture and perceived behavioural control on the relationship between investment intention and behaviour.

### **6.8 Chapter summary**

In this chapter I hypothesised that human, social and financial capital will indirectly influence investment intention via personal attitudes, subjective norms and perceived behavioural control. Results of bootstrap analyses for indirect effects confirmed the hypothesised relationships. By differentiating between individuals with Greek and English nationality, findings show that those with a collectivistic background were inclined to invest all forms of capital while those with an individualistic cultural background were willing to invest only social capital.

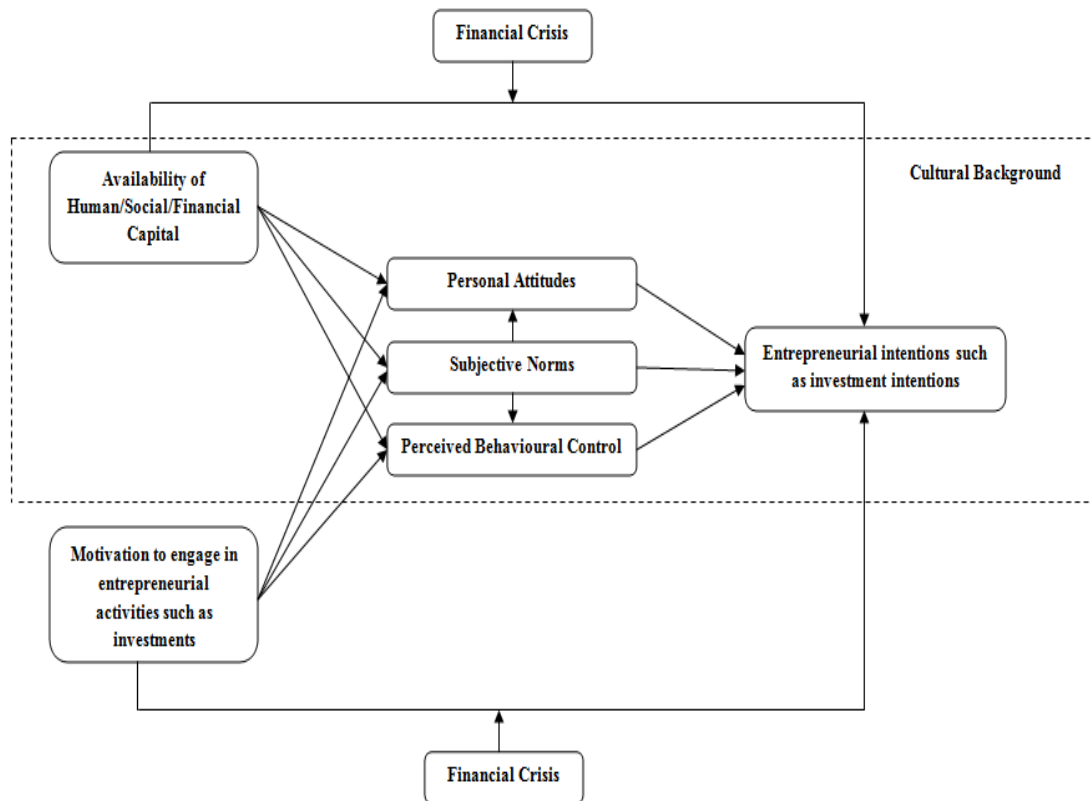
Findings from the three chapters (Chapter 4, 5 and 6) are jointly considered and their theoretical and practical contribution towards a more holistic understanding of investment intentions is discussed in the following chapter. The final chapter of this thesis also identifies overall limitations and proposes future research direction.



## Chapter 7: Conclusion

This thesis has identified common patterns and gaps in previous research and proposed new research directions regarding entrepreneurial intentions. Entrepreneurial intentions were approached as a construct that depends on diverse psychological, background and situational factors. In order to respond to this challenge a systematic literature review was undertaken, which yielded specific research questions serving as the overall objectives of the three empirical studies included in this thesis. The overall purpose of this thesis was to provide evidence that entrepreneurial intentions are influenced by the effects of the financial crisis, the availability of human, social and financial capital, the motives that do not only relate to monetary rewards, the personal attitudes, subjective norms and perceived behavioural control. A multifaceted entrepreneurial intentionality model which takes into consideration key contextual dimensions including individual, psychological and cultural factors has emerged. The figure below provides a visual representation of the overall integrated conceptual model.

**Figure 7.1 Multifaceted entrepreneurial intentionality model**



By considering the main findings of the three empirical studies holistically one can better understand how entrepreneurial intentions such as investment intentions are formed and gain a more detailed perspective regarding the diverse background, situational and psychological factors that may solely have a weaker predictive power than entrepreneurial intentions. Particularly, the first purpose of this thesis was to determine how the environmental factors interact with background and psychological factors in the formation of entrepreneurial intentions. This has been demonstrated by empirical study I, which extended and tested the ecological validity of Bird's Entrepreneurial Intentionality Model (Bird, 1988) while incorporating the mediating role of financial crisis and the inclusion of motivations. Findings suggest that individuals form entrepreneurial intentions based on the availability of human and social capital, their motivation for independence, innovation, recognition and self-realization. Moreover, individuals with available financial capital who want to gain financial success form stronger entrepreneurial intentions when they have been negatively affected by the financial crisis. Individuals form entrepreneurial intentions because they want independence, recognition and self-realization when they are affected by the crisis in a positive way. The second purpose of this thesis was to investigate the identification of the reasons why and the conditions under which the Theory of Planned Behaviour (TPB; Ajzen, 1991) psychological constructs relate and interact. Empirical study II has substantiated this purpose by going beyond the applicability and ecological validity of the TPB and providing evidence regarding mediating and moderating effects between and among the TPB constructs. Particularly, findings show that the relationship between subjective norms and entrepreneurial intentions is mediated by the role of personal attitude and perceived behavioural control, while entrepreneurial intentions are stronger even when perceived behavioural control is low as this is substituted by the presence of personal attitude and subjective norms. Establishing whether background factors influence entrepreneurial intentions indirectly via psychological constructs and whether the relationships differ between cultural backgrounds was the third purpose of this thesis, which has been substantiated by Study IV. By extending and testing Bird's Entrepreneurial Intentionality Model (EIM; Bird, 1988) with the inclusion of the TPB (Ajzen, 1991; Ajzen and Fishbein, 2005) and the role of individuals' collectivistic and individualistic cultural dimensions, empirical study III provided evidence that young

individuals with a collectivistic cultural background are more inclined towards entrepreneurial activities when they have human, social and financial resources available in contrast to individuals that come from an individualistic culture and are willing to invest only their available social capital components.

### **7.1 Theoretical contribution**

This thesis contributes to an understanding of entrepreneurial cognition and especially entrepreneurial intentions by examining diverse factors that may influence the formation of venture creation and growth intentions and providing valuable recommendations for future research in the field. Based on these propositions, one of the innovative features of this research is that it approaches entrepreneurship not only from an idea generation perspective, but also from the investors' perspective. Investors were conceptualised as individuals who actively participate and engage in the venture creation or growth process by investing their available human, social and financial capital, which is in line with Sarasvathy's (2001) theorisation regarding potential entrepreneurs that follow effectuation processes in order to enter entrepreneurship. Overall, this thesis contributes to entrepreneurial intentions by studying effectuation and causation processes in order to engage in venture creation and growth activities. In this regard, this research examined the diverse prospects that jointly determine entrepreneurial intentions by combining diverse theoretical aspects instead of solely implementing over-researched cognitive models and theories. The main findings extend and contrast with previous research on entrepreneurial intentions by demonstrating the reasons why and the conditions under which certain effects in the form of background, situational and psychological factors influence the formation of entrepreneurial intentions such as investment intentions.

In particular, the contribution of this thesis to entrepreneurial intentionality stems from examining the influence of capital and motives on individuals' intentions to engage in entrepreneurial activities by following effectuation processes. This made it possible to determine differences and similarities regarding the role of capital and motives in the intention to enter entrepreneurship between the over-researched approach of entrepreneurs that typically identifies an entrepreneurial idea (causation processes) and the new conceptualisation of investors that act as entrepreneurs by identifying

opportunities to invest their capital in an already identified entrepreneurial idea that they truly believe in (effectuation processes). On one hand, individuals' availability of human and social capital and their need to gain outcomes related to independence, innovation, recognition and self-realisation has a positive influence on entrepreneurial intentions related either to investment intentions as indicated in this research or idea generation intentions as evidenced in previous work (e.g. Shane *et al.*, 1991; Amit *et al.*, 2001; Carr and Sequeira, 2007; Cassar, 2007; Liñán, 2008; Drost, 2010). On the other hand, the availability of financial capital and the need to gain financial success neither hinder nor boost venture creation or growth when it comes to investment intentions as the relationship is non-significant. However, when it comes to idea generation intentions, the aforementioned background and psychological factors positively affect entrepreneurial intentions (e.g. Kirkwood, 2009a; Cetindamar *et al.*, 2011). Most importantly, this research explains the conditions under which individuals' availability of capital and motivational factors will lead to the formation of venture creation and growth intentions. The inclusion of motivation and interaction effects between background and situational factors extends Birds' (1988) Entrepreneurial Intentionality Model by providing evidence that the relationship between capital-motives and entrepreneurial intentions is moderated by the role of the positive/negative effects of the financial crisis on individuals' work conditions and income levels.

Secondly, this research goes beyond the applicability and ecological validity of Ajzen's (1991) Theory of Planned Behaviour and extends the proposed inter-correlated relationships among personal attitude, subjective norms and perceived behavioural control by i) revealing that personal attitude and perceived behavioural control act as parallel mediators in the subjective norms-intention relationship and ii) highlighting a substitution hypothesis where entrepreneurial intentions during times of severe economic constraints are strong even when perceived behavioural control is low. The proposed parallel mediation effects in entrepreneurial intentions, such as investment intentions, complement previous research on the idea generation context by explaining the weak (Engle *et al.*, 2010; Iakovleva *et al.*, 2011; Liñán *et al.*, 2011c; Kautonen *et al.*, 2013) or insignificant (Krueger, 2000; Autio *et al.*, 2001; Wu and Wu, 2008; Liñán and Chen, 2009; Moriano *et al.*, 2012) influence of subjective norms on the formation of entrepreneurial intentions. Findings regarding the insignificant 2-way moderation

effects between the TPB antecedents from one perspective differ from previous work (Fitzsimmons and Douglas, 2011) on Shapero's model that indicates that perceived desirability (personal attitude) interacts with perceived feasibility (perceived behavioural control). From another perspective, the aforementioned non-significant relationships are explained by the 3-way moderation effect, which in turn contrasts with the only study (de Jong, 2013) to my knowledge claiming that entrepreneurial intentions in the form of high-tech small business owners' decisions to exploit opportunities for innovation are stronger when all three antecedents of the TPB are present and high.

Finally, findings contribute to the better understanding of cultural influences on the formation of entrepreneurial intentions by combining Bird's (1988) Entrepreneurial Intentionality Model and Ajzen's (1991) Theory of Planned Behaviour. Individuals' availability of diverse capital forms (background factors) initially influence the more proximal antecedent of intentions and these relationships differ according to Hofstede's (2001) cultural continuum between individualistic and collectivistic cultures. The mediating role of personal attitudes, subjective norms and perceived behavioural control in the relationship between capital and entrepreneurial intentions such as investments explains why the availability of human, social and financial capital may lead to the formation of entrepreneurial intentions, as indicated in previous research (Evans and Jovanovic, 1989; Robinson and Sexton, 1994; Davidsson and Honig, 2003; Arenius and Minniti, 2005; de Clercq and Arenius, 2006; Kim *et al.*, 2006; Cetindamar *et al.*, 2011). Moreover, the diversity of individuals' cultural origins explains why certain types of capital (human-social-financial for individuals with collectivistic cultural influences, and social for those with individualistic cultural backgrounds), will be invested in new or existing ventures and therefore allow entrepreneurship to flourish in multicultural countries such as the UK.

Overall, the contribution of this thesis from a theoretical perspective is related to the integration of a conceptual model and its applicability in the investment context. By bringing together diverse theoretical models this thesis provides less parsimonious integrated paths on which background, situational and psychological factors determine the formation of entrepreneurial intentions such as investment intentions. This provides a core theoretical background regarding the main procedures that individuals follow until the point that they reach their final decision and form high levels of entrepreneurial

intentions such as investment intentions. The same theoretical model could potentially apply to the business idea generation context and therefore provide a core explanation regarding the paths that actually lead to entrepreneurial intentions such as business idea generation intentions. Therefore, the theoretical contribution of this thesis is twofold, starting with the effectuation related context (investment context) and extended to the causation related context (entrepreneurial context in the form of idea generation).

## **7.2 Practical contribution**

This thesis highlights the presence of investment intentions among individuals from diverse age, gender, cultural and employment status groups. It is considered that an alternative way of entering entrepreneurship, such as investments, can supplement venture creation and growth on a national or international level. Considering that entrepreneurship requires both individuals responsible for the idea generation but also individuals who will share the same vision and provide the venture with the appropriate resources, which are not exclusively financial, redirecting part of the research focus from entrepreneurs to investors is essential.

Policy makers can make effective use of this finding by creating mechanisms that simultaneously a) encourage peer-support networking that will trade all forms of available capital, like the skills brokerage support mechanism (Papagiannidis and Li, 2005; Papagiannidis *et al.*, 2009), which could be based on a triple helix approach that promotes collaboration among Universities, Government and Industry and b) encourage investments through schemes that bring together traditional entrepreneurs and investors who act as entrepreneurs and promote positive entrepreneurial outcomes, identify the value of social ties and build on self-confidence initiatives. Equally importantly, the above interventions should be accordingly adopted so as to promote entrepreneurial activity in diverse economic and cultural backgrounds. For instance, differentiation in terms of the creation and adaptation of the new mechanisms on a national level is required for countries that have felt the implications of the financial crisis more deeply, such as Greece. More value should be placed on creating mechanisms that will bridge the gap between entrepreneurs and investors that are willing to invest their social capital components e.g. contacts in a new or already established venture in contrast to other

forms of capital, like financial capital, which can be more easily available from investors in countries with fewer economic restrictions.

Following the same logic, countries that have experienced or are still experiencing major economic obstacles, where the availability of financial capital is scarce and the opportunities for engagement in entrepreneurial activities limited, need to come up with mechanisms that will initially encourage the psychological perspective of entrepreneurship by adopting, for instance, advertisement spots that will jointly boost individuals' confidence in their ability to be involved in entrepreneurial actions, promote the role of entrepreneurial action under severe economic constraints and encourage and present the positive outcomes of entrepreneurial engagement both on a personal and national level. This is not to say that entrepreneurship does not involve risky decisions but in the case of personal and national severe economic conditions, individuals may only waste their time by engaging in investment activities instead of wasting money that could be used for more subsistence related purposes. Based on the fact that investors and entrepreneurs will work together with the common objective being the creation and growth of the venture, the establishment of an entrepreneurial team will add more confidence in making the right decisions and overcoming obstacles, which will in turn make entrepreneurial engagement more feasible and attractive.

Moreover, cross-cultural distinctions in multinational societies such as England are needed. Findings regarding the diverse available forms of capital that individuals may invest in a new or existing venture should be treated as indications of an urgent need for new mechanisms that will attract and refer to individuals with different interests within the same country. The new mechanisms that will bring together entrepreneurs and investors should include subdivisions that promote collaboration among potential entrepreneurs/investors with diverse cultural origins and actively reflect their needs. For instance, more value could be placed on the availability of social capital and how this can effectively be used and implemented in the venture among English individuals. In contrast, for immigrants such as Greek individuals that live in the UK, the focus should be additionally turned on human and financial capital.

Overall, the contribution of this thesis from a practical perspective is related to the core mechanisms that need to be adopted in order to make entrepreneurship flourish. Particularly, old mechanisms that may take into consideration only the availability of

capital without incorporating and taking account of the psychological factors that may boost venture creation and growth should be expanded by providing information or psychologically related training courses that will encourage entrepreneurship by encouraging and motivating investment prospects. In countries where the mechanisms are absent totally new mechanisms should emerge that will take into account all factors that may influence individuals' intentions to engage in entrepreneurial activities and will place core value on the interaction between entrepreneurs and investors. The core point, though, according to the findings of this thesis would be to turn the focus on potential investors who do not fall into the typical business angels or venture capitalists categorisation but instead are individuals from the general public. In this regard, mechanisms should be advertised and promoted to all societal levels because every individual can potentially be an investor that could contribute to the venture creation or growth and consequently to the growth of the country.

### **7.3. Limitations and Future research**

The role of specific background, situational and psychological aspects of entrepreneurial intentions has been examined in this research. Future work could complement the findings of this thesis by examining the proposed relationships in diverse and larger sample groups in terms of national settings, age groups or cultural backgrounds. The above factors and the way that they may determine entrepreneurial intentions can also be examined among individuals with a family business entrepreneurial background by focusing on intentions to take over and grow the existing family business. Considering that the empirical studies included in this thesis were mainly focused on entrepreneurship involving the establishment and growth of profit oriented enterprises, future studies could explore whether the same factors affect individuals' intentions to solely create a social enterprise and highlight possible differences or similarities in their psychological processes. In this vein, scholars could investigate the role of the financial crisis in individuals' decisions to engage in social entrepreneurship activities and explore the motivation constructs that lead to social enterprise formation and growth under severe economic conditions.

It is also rational to go beyond the verification of the findings of this thesis and explore additional factors that may explain the entrepreneurial process more holistically.



For instance, scholars could incorporate the role of situational factors in the form of unemployment and explore the interrelated influence on the formation of entrepreneurial intentions when individuals are either positively or negatively affected by the financial crisis. This can be implemented in diverse countries where the global economic recession may have had a different impact on individuals' life, work, perceptions and entrepreneurial considerations.

This thesis has investigated diverse combinations of background, situational and psychological factors as examined in the conceptual model of each empirical study. Even less parsimonious research is needed in order to initially justify the theoretical perspective that combines all the identified factors into one model and consequently examine this holistic model in diverse national or individual financial settings. The model could also be extended by the inclusion of other factors. In this regard, scholars could include antecedents to the formation of the individual characteristics related to human, social and financial capital such as entrepreneurial education representing a form of human capital. Environmental factors could also be taken into consideration by examining simultaneously the role of the i) micro-environment such as family, ii) meso-environment such as the influence of the region and iii) macro-environment in the form of a specific national context. Scholars can also consider the performance outputs with regards to the set objectives that may vary from individual to individual depending on their circumstances and motivations. At a future time subjective assessment of one's performance can influence individual, psychological motivation and lead to a repeat pattern of the set behaviour. The experiences gained can potentially provide improved starting conditions that will lead to better performance, creating a virtuous circle via the learning process that takes place.

As this research had to be completed within a specific time period, it has filled in gaps in previous research on entrepreneurial intentions and examined only some of the propositions identified in the extensive literature review. Future research is needed in order to adopt and address the rest of the propositions and research questions. The systematic literature review in this research has not comprehensively examined the methodological aspects when it comes to personality theory, motivation theory, self-efficacy theory, the Entrepreneurial Event Model and the Theory of Planned Behaviour. Possible differences in measuring the diverse constructs may have yielded diverse

results, which may indicate a need for more agreed upon scales for measuring the diverse constructs if research on entrepreneurial intentions wants to make comparisons more feasible. Therefore, a systematic literature review that will purely concentrate on measurement approaches is crucial.

The thesis examined the link between entrepreneurial intentions and entrepreneurial behaviours only in the final study due to low response rates in the second measurements. One possible explanation for the low response rates in the attempt of this thesis to follow a longitudinal research design in empirical studies I, III and III is that potential investors who act as entrepreneurs were approached three months after the initial measurement on entrepreneurial intentions such as investment intentions. Considering that venture creation and growth requires a considerable amount of time, the time length in the first three empirical studies may not have been sufficient for entrepreneurial behaviours to occur. This may have prevented the participants of this thesis from taking part in the second measurements. Therefore, in line with Fayolle and Liñán (2014) further research is needed on the relationship between entrepreneurial intentions and entrepreneurial behaviours with studies that will adopt a longitudinal research design and, moreover, measure entrepreneurial behaviours over a considerable amount of time.

## **Appendices**

### **8.1 Appendix A: Questionnaire (Empirical Study I)**

This research has been designed by Eftychia Palamida, PhD student at Newcastle University Business School. The aim of this research is to study whether the financial crisis interacts with human, social and financial capital and motives in the formation of entrepreneurial intentions such as investment intentions in Greece.

The questions that follow concern your circumstances and may be of a personal nature. You may want to complete the questionnaire in private, when you are not disturbed. Your answers will be dealt with in a confidential manner. Any information provided will be used solely for the purpose of this research. It is very important that you answer all the questions. There are no right or wrong answers. Please provide the answer that you think suits your circumstances best. You will need approximately 15-20 minutes to complete the questionnaire. You have the right to withdraw any time. In order for us to reach robust conclusions, it is important that you respond to this survey once more in three months' time. I kindly ask you to provide us with your email address so that I can reach you for a second time.

Please do not hesitate to contact the researcher (e.palamida@ncl.ac.uk) if you have any questions or concerns regarding this research or the questionnaire.

Thank you very much for your collaboration!

■ What is your email address? (Optional)

■ As noted above, this questionnaire will be the first of two. The main reason for this is that I am interested to test possible changes over time. I therefore ask you to fill in the following questions and create a personal code, which will be used to identify your answers in the next measurement. It is important to note that I do not want to identify you, but your answers. By answering the following questions you will help us in the realisation of the study, keeping your anonymity at the same time.

What is the first letter of your mother's first name?

What is the first letter of your mother's surname?

What is the second letter of your father's first name?

What is the first letter of your Western horoscope sign?

What is the first letter of the name of the city/town/village in which you were born?

### **Eligibility of participation in the survey**

Have you ever invested and/or are you still investing any of your skills, knowledge, resources (not exclusively financial capital) or access to networks in a project, in exchange for a stake in the project or a share in the project's revenues? The 'project' can be a new business venture, but it could also be other types of projects (e.g. social entrepreneurship, a company turnaround project etc).

1. Yes, this is my main occupation
2. Yes, this is in parallel to my main occupation
3. No

### **Stage 1: About you**

1. Which stage in your career are you in?

1. I have never worked (e.g. you have been a full time student so far)
2. Early (up to 10 years of employment)
3. Middle (10 years or more, but up to 20 years or employment)
4. Late (20 years of employment or more, but not retired)
5. Retired

2. What is your current employment status? If you are retired what was your last main employment status?

1. Paid employment
2. Self-employment
3. Unemployed

3. What is your current main occupation? If you are unemployed, what was your last main occupation? If you never worked please leave empty.

4. How many years have you been working in your current or last job (e.g. 10)? If you have never worked please enter 0.

5. How many hours do you work per week? If you are currently unemployed and you do not work, please indicate how many hours you used to work per week in your last employment. If you have never worked please enter 0.

6. Which year were you born (e.g. 1935)?

7. What is your gender?

1. Male
2. Female

8. What is your nationality?

9. In which country have you mostly lived the past 12 months?

10. What is your marital status?

1. Single
2. Never married
3. Engaged
4. Married or in Civil Partnership
5. Divorced
6. Widowed
7. Separated

11. What is your highest educational level?

1. Primary School
2. High School
3. Technical Education
4. Undergraduate degree
5. Postgraduate degree
6. Doctorate degree

12. Please specify years of education in total.

13. What is your annual household income? (1 Euro = £0.90)

1. Less than £10,000
2. £10,000 to £19,999
3. £20,000 to £29,999
4. £30,000 to £39,999
5. £40,000 to £49,999
6. £50,000 to £59,999
7. £60,000 or more

14. Have you ever started your own venture? If yes, how many ventures have you started? If no, simply enter 0 or leave empty.

15. Which of the following resources that you currently own would you be prepared to share in a new venture that you truly believed in. (response options: I do not have this resource, Not prepared at all, -, -, -, Very prepared)

15.1 Venture Capital (e.g. cash)

15.2 Capital: Land

15.3 Capital: Buildings

15.4 Capital: Equipment

15.5 Capital: Machinery

15.6 Capital: Transportation

15.7 Capital: Raw materials

15.8 IT resources (e.g. hardware or software)

15.9 Human resources (e.g. staff time)

16. Please rate your level of skill for the following key skills. (response options: No skill, -, -, -, Advanced skill)

16.1 Management skills

16.2 Marketing skills

16.3 Financial skills

16.4 Legal skills

16.5 Technical skills

16.6 Information technology skills

17. Please rate your level of experience for the following key skills. (response options: No experience, -, -, -, Advanced experience)

17.1 Management experience

17.2 Marketing experience

17.3 Financial experience

17.4 Legal experience

17.5 Technical experience

17.6 Information technology experience

18. How many members do your social cycles feature? (e.g. how big is your family or how many friends do you have?) Please rate each one of the following types. (response options: A lot, More than average, Average, Less than average, A few)

18.1 Your family members

18.2 Your relatives

18.3 People in your neighbourhood

18.4 Your friends

18.5 Your coworkers/colleagues

18.6 Old classmates

19. With how many people in each of the following categories do you keep in routine contact? (response options: All, Most, Some, Few, None)

19.1 Your family members

19.2 Your relatives

19.3 People in your neighbourhood

19.4 Your friends

19.5 Your coworkers/colleagues

19.6 Old classmates

20. Among the people in each of the following categories, how many can you trust?  
(response options: All , Most, Some, Few, None)

20.1 Your family members

20.2 Your relatives

20.3 People in your neighbourhood

20.4 Your friends

20.5 Your coworkers/colleagues

20.6 Old classmates

21. Among people in each of the following categories, how many will definitely help you if asked? (response options: All , Most, Some, Few, None)

21.1 Your family members

21.2 Your relatives

21.3 People in your neighbourhood

21.4 Your friends

21.5 Your coworkers/colleagues

21.6 Old classmates

22. When people that you know in all the six categories are considered, how many possess the following assets/resources? (response options: All , Most, Some, Few, None)

22.1 Certain political power

22.2 Wealth or owners of an enterprise or a company

22.3 Broad connections with others



22.4 High reputation/influential

22.5 With high school or more education

22.6 With a professional job

23. Among each of the following groups and organisations, how many will help you if asked? (response options: All , Most, Some, Few, None)

23.1 Governmental & Political

23.2 Economic

23.3 Social

23.4 Cultural

23.5 Recreational & Leisure

24. How often do you participate in activities and events organised by the groups listed below? (response options: Very often, Often, Sometimes, Almost never, Never)

24.1 Governmental & Political

24.2 Economic

24.3 Social

24.4 Cultural

24.5 Recreational & Leisure

25. When all groups and organisations in the five categories are considered, how many possess the following assets/resources? (response options: All , Most, Some, Few, None)

25.1 Significant power for decision making

25.2 Solid financial basis or other resources

25.3 Broad social connections

25.4 Great social influence

25.5 Skills and knowledge pools

## **Stage 2: Investments**

You have indicated that you have never invested your skills, knowledge, resources (not exclusively financial capital) or access to networks in a project, in exchange for a stake in a project or a share in the project's revenues. Nevertheless, I would like to ask you about your attitudes with regard to such activities.

26. Please select the options that apply to your case. (response options: strongly disagree, disagree, neither agree nor disagree, agree, strongly agree)

26.1 I intend to engage in skill investment in the next three months.

26.2 I expect that I will engage in investment activities in the next three months.

27. How much time do you intend to spend on investment activities in the next three months?

1. No time at all
2. A little time
3. A fair amount of time
4. Much time
5. Very much time

28. To what extent would the following reasons be important to you if you were to engage in investment activities? (response options: to no extent, little extent, some extent, great extent, to a very great extent)

28.1 to be innovative and in the forefront of technology.

28.2 to develop an idea for a product.

28.3 to have the power to greatly influence an organisation.

28.4 to have greater flexibility for my personal and family life.

28.5 to have considerable freedom to adapt my own approach to work.

28.6 to achieve something and get recognition for it.

28.7 to achieve a higher position for myself in society.

- 28.8 to be respected by my friends.
- 28.9 to earn a larger personal income.
- 28.10 to give myself, my dependents financial security.
- 28.11 to have a chance to build great wealth or a very high income.
- 28.12 to challenge myself.
- 28.13 to fulfil a personal vision.
- 28.14 to lead and motivate others.
- 28.15 to grow and learn as a person.

**Stage 3: Financial Crisis**

29. In which way did the financial crisis affect your (very negatively, -, -, -, -, -, -, -, very positively)
- 29.1 work
  - 29.2 financial situation

**Thank you!**

Many thanks for completing this questionnaire. Your time and effort are much appreciated.

30. Do you have any other comments?

## **8.2 Appendix B: Questionnaire (Empirical Study II)**

This research has been designed by Eftychia Palamida, PhD student at Newcastle University Business School. The aim of this research is to study the reasons why the psychological constructs namely personal attitudes, subjective norms and perceived behavioural control relate to entrepreneurial intentions such as investment intentions and explore the conditions under which the aforementioned psychological constructs relate and interact in the investment context.

The questions that follow concern your circumstances and may be of a personal nature. You may want to complete the questionnaire in private, when you are not disturbed. Your answers will be dealt with in a confidential manner. Any information provided will be used solely for the purpose of this research. It is very important that you answer all the questions. There are no right or wrong answers. Please provide the answer that you think suits your circumstances best. You will need approximately 5-10 minutes to complete the questionnaire. You have the right to withdraw any time. In order for us to reach robust conclusions, it is important that you respond to this survey once more in three months' time. I kindly ask you to provide us with your email address so that I can reach you for a second time.

Please do not hesitate to contact the researcher (e.palamida@ncl.ac.uk) if you have any questions or concerns regarding this research or the questionnaire.

Thank you very much for your collaboration!

■ What is your email address? (Optional)

■ As noted above, this questionnaire will be the first of two. The main reason for this is that I am interested to test possible changes over time. I therefore ask you to fill in the following questions and create a personal code, which will be used to identify your answers in the next measurement. It is important to note that I do not want to identify you, but your answers. By answering the following questions you will help us in the realisation of the study, keeping your anonymity at the same time.

What is the first letter of your mother's first name?

What is the first letter of your mother's surname?

What is the second letter of your father's first name?

What is the first letter of your Western horoscope sign?

What is the first letter of the name of the city/town/village in which you were born?

### **Eligibility of participation in the survey**

Have you ever invested and/or are you still investing any of your skills, knowledge, resources (not exclusively financial capital) or access to networks in a project, in exchange for a stake in the project or a share in the project's revenues? The 'project' can be a new business venture, but it could also be other types of projects (e.g. social entrepreneurship, a company turnaround project etc).

1. Yes, this is my main occupation
2. Yes, this is in parallel to my main occupation
3. No

### **Stage 1: About you**

1. What is your current employment status? If you are retired what was your last main employment status?

1. Paid employment
2. Self-employment
3. Unemployed

2. How many hours do you work per week? If you are currently unemployed and you do not work, please indicate how many hours you used to work per week in your last employment. If you have never worked please enter 0.

3. Which year were you born (e.g. 1935)?

4. What is your gender?

3. Male
4. Female

5. What is your nationality?

6. In which country have you mostly lived the past 12 months?

7. What is your marital status?

1. Single
2. Never married
3. Engaged
4. Married or in Civil Partnership
5. Divorced
6. Widowed
7. Separated

8. What is your highest educational level?

1. Primary School
2. High School
3. Technical Education
4. Undergraduate degree
5. Postgraduate degree
6. Doctorate degree

## **Stage 2: Investment Perceptions**

9. Please select the options that apply to your case. (response options: strongly disagree, disagree, neither agree nor disagree, agree, strongly agree)

9.1 It is wise for me to engage in investment activities.

9.2 It is useful for me to engage in investment activities.

9.3 I think it is interesting to engage in investment activities.

9.4 The person most important to me thinks that I should engage in investment activities.

9.5 Most people who are important to me think that I should engage in investment activities.

- 9.6 Overall I feel confident about being able to engage in investment activities.
- 9.7 I can overcome any obstacles or problems that could prevent me from engaging in investment activities.
- 9.8 Engaging in investment activities is within my personal control.
- 9.9 Investment activities are easy.
- 9.10 I think that I possess the abilities that are needed to be able to engage in investment activities.
- 9.11 I intend to engage in skill investment in the next three months.
- 9.12 I expect that I will engage in investment activities in the next three months.
- 9.1 I intend to engage in skill investment in the next three months.
- 9.2 I expect that I will engage in investment activities in the next three months.
10. How much time do you intend to spend on investment activities in the next three months?
6. No time at all
  7. A little time
  8. A fair amount of time
  9. Much time
  10. Very much time

**Thank you!**

Many thanks for completing this questionnaire. Your time and effort are much appreciated.

11. Do you have any other comments?

### **8.3 Appendix C: Questionnaire (Empirical Study III)**

This research has been designed by Eftychia Palamida, PhD student at Newcastle University Business School. The aim of this research is to study Explore whether background factors concerning the availability of human, social, financial capital indirectly influence entrepreneurial intentions such as investment intentions via personal attitudes, subjective norms and perceived behavioural control and determine how culture influences the aforementioned processes between individuals with an English and Greek cultural background.

The questions that follow concern your circumstances and may be of a personal nature. You may want to complete the questionnaire in private, when you are not disturbed. Your answers will be dealt with in a confidential manner. Any information provided will be used solely for the purpose of this research. It is very important that you answer all the questions. There are no right or wrong answers. Please provide the answer that you think suits your circumstances best. You will need approximately 15-20 minutes to complete the questionnaire. You have the right to withdraw any time. In order for us to reach robust conclusions, it is important that you respond to this survey once more in three months' time. I kindly ask you to provide us with your email address so that I can reach you for a second time.

Please do not hesitate to contact the researcher (e.palamida@ncl.ac.uk) if you have any questions or concerns regarding this research or the questionnaire.

Thank you very much for your collaboration!

■ What is your email address? (Optional)

■ As noted above, this questionnaire will be the first of two. The main reason for this is that I am interested to test possible changes over time. I therefore ask you to fill in the following questions and create a personal code, which will be used to identify your answers in the next measurement. It is important to note that I do not want to identify you, but your answers. By answering the following questions you will help us in the realisation of the study, keeping your anonymity at the same time.



What is the first letter of your mother's first name?

What is the first letter of your mother's surname?

What is the second letter of your father's first name?

What is the first letter of your Western horoscope sign?

What is the first letter of the name of the city/town/village in which you were born?

### **Eligibility of participation in the survey**

Have you ever invested and/or are you still investing any of your skills, knowledge, resources (not exclusively financial capital) or access to networks in a project, in exchange for a stake in the project or a share in the project's revenues? The 'project' can be a new business venture, but it could also be other types of projects (e.g. social entrepreneurship, a company turnaround project etc).

1. Yes, this is my main occupation
2. Yes, this is in parallel to my main occupation
3. No

### **Stage 1: About you**

1. Which stage in your career are you in?

1. I have never worked (e.g. you have been a full time student so far)
2. Early (up to 10 years of employment)
3. Middle (10 years or more, but up to 20 years or employment)
4. Late (20 years of employment or more, but not retired)
5. Retired

2. What is your current employment status? If you are retired what was your last main employment status?

1. Paid employment
2. Self-employment
3. Unemployed

3. Which year were you born (e.g. 1935)?

4. What is your gender?

1. Male
2. Female

5. What is your nationality?

6. In which country have you mostly lived the past 12 months?

7. What is your highest educational level?

1. Primary School
2. High School
3. Technical Education
4. Undergraduate degree
5. Postgraduate degree
6. Doctorate degree

8. What is your annual household income? (1 Euro = £0.90)

1. Less than £10,000
2. £10,000 to £19,999
3. £20,000 to £29,999
4. £30,000 to £39,999
5. £40,000 to £49,999
6. £50,000 to £59,999
7. £60,000 or more

9. Please rate your level of skill for the following key skills. (response options: No skill, -, -, -, Advanced skill)

9.1 Management skills

9.2 Marketing skills

9.3 Financial skills

9.4 Legal skills

9.5 Technical skills

9.6 Information technology skills

10. Please rate your level of experience for the following key skills. (response options: No experience, -, -, -, Advanced experience)

10.1 Management experience

10.2 Marketing experience

10.3 Financial experience

10.4 Legal experience

10.5 Technical experience

10.6 Information technology experience

11. How many members do your social cycles feature? (e.g. how big is your family or how many friends do you have?) Please rate each one of the following types. (response options: A lot, More than average, Average, Less than average, A few)

11.1 Your family members

11.2 Your relatives

11.3 People in your neighbourhood

11.4 Your friends

11.5 Your coworkers/colleagues

11.6 Old classmates

12. With how many people in each of the following categories do you keep in routine contact? (response options: All, Most, Some, Few, None)

12.1 Your family members

12.2 Your relatives

12.3 People in your neighbourhood

12.4 Your friends

12.5 Your coworkers/colleagues

12.6 Old classmates

13. Among the people in each of the following categories, how many can you trust?  
(response options: All , Most, Some, Few, None)

13.1 Your family members

13.2 Your relatives

13.3 People in your neighbourhood

13.4 Your friends

13.5 Your coworkers/colleagues

13.6 Old classmates

14. Among people in each of the following categories, how many will definitely help you if asked? (response options: All , Most, Some, Few, None)<sup>4</sup>

14.1 Your family members

14.2 Your relatives

14.3 People in your neighbourhood

14.4 Your friends

14.5 Your coworkers/colleagues

14.6 Old classmates

15. When people that you know in all the six categories are considered, how many possess the following assets/resources? (response options: All , Most, Some, Few, None)

15.1 Certain political power

15.2 Wealth or owners of an enterprise or a company

15.3 Broad connections with others

15.4 High reputation/influential

15.5 With high school or more education

15.6 With a professional job

16. Among each of the following groups and organisations, how many will help you if asked? (response options: All , Most, Some, Few, None)

16.1 Governmental & Political

16.2 Economic

16.3 Social

16.4 Cultural

16.5 Recreational & Leisure

17. How often do you participate in activities and events organised by the groups listed below? (response options: Very often, Often, Sometimes, Almost never, Never)

17.1 Governmental & Political

17.2 Economic

17.3 Social

17.4 Cultural

17.5 Recreational & Leisure

18. When all groups and organisations in the five categories are considered, how many possess the following assets/resources? (response options: All , Most, Some, Few, None)

18.1 Significant power for decision making

18.2 Solid financial basis or other resources

18.3 Broad social connections

18.4 Great social influence

18.5 Skills and knowledge pools

## **Stage 2: Investment Perceptions**

19. Please select the options that apply to your case. (response options: strongly disagree, disagree, neither agree nor disagree, agree, strongly agree)

- 19.1 It is wise for me to engage in investment activities.
- 19.2 It is useful for me to engage in investment activities.
- 19.3 I think it is interesting to engage in investment activities.
- 19.4 The person most important to me thinks that I should engage in investment activities.
- 19.5 Most people who are important to me think that I should engage in investment activities.
- 19.6 Overall I feel confident about being able to engage in investment activities.
- 19.7 I can overcome any obstacles or problems that could prevent me from engaging in investment activities.
- 19.8 Engaging in investment activities is within my personal control.
- 19.9 Investment activities are easy.
- 19.10 I think that I possess the abilities that are needed to be able to engage in investment activities.
- 19.11 I intend to engage in skill investment in the next three months.
- 19.12 I expect that I will engage in investment activities in the next three months.
- 19.13 I intend to engage in skill investment in the next three months.
- 19.14 I expect that I will engage in investment activities in the next three months.

20. How much time do you intend to spend on investment activities in the next three months?

- 1. No time at all
- 2. A little time
- 3. A fair amount of time
- 4. Much time
- 5. Very much time

**Thank you!**

Many thanks for completing this questionnaire. Your time and effort are much appreciated.

21. Do you have any other comments?

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