MOTIVATIONS AND CONSEQUENCES OF THE PURSUIT OF SOCIAL AND ENVIRONMENTAL GOALS - AN INTERNATIONAL STUDY

TRAN NGOC THIEN THY

Doctor of Philosophy

ASTON UNIVERSITY

September 2021

ASTON UNIVERSITY

MOTIVATIONS AND CONSEQUENCES OF THE PURSUIT OF SOCIAL AND ENVIRONMENTAL GOALS - AN INTERNATIONAL STUDY

Tran Ngoc Thien Thy

Doctor of Philosophy

2021

Thesis summary

The thesis aims to advance our understanding of how socially and environmentally oriented entrepreneurial activities are shaped by the interplay between individual and contextual factors. Accordingly, the thesis builds a multi-level framework to answer two research questions: How is entrepreneurs' pursuit of social and environmental goals shaped by the interplay of entrepreneurial motivation (opportunity/necessity motivation perspective) and contexts? (Research question 1, chapters 2 and 3) How are entrepreneurial consequences (innovation and employment growth aspirations) shaped by the interplay of entrepreneurs' pursuit of social/environmental goals and contexts? (Research question 2, chapter 4). After the introduction chapter 1, the three empirical chapters use Global Entrepreneurship Monitor data (GEM) 2009 to answer the research questions.

Drawing on the integration of the literature of opportunity/necessity motivation perspective with the insights from cultural theory, chapter 2 explores the entrepreneurial motivation of social and environmental entrepreneurs. The finding in chapter 2 shows that necessity entrepreneurs are more socially and environmentally oriented than opportunity entrepreneurs. In addition, national culture plays important role in explaining the difference between opportunity and necessity entrepreneurs in pursuing social and environmental goals. While cultural norms in socially supportive and performance-based societies moderate this relationship, cultural values in postmaterialism do not. The difference between the opportunity and necessity entrepreneurs in pursuing social and environmental goals is lessened by socially supportive norms but is intensified by performance-based norms.

Chapters 3 and 4 investigate the consequences of social and environmental entrepreneurship by integrating the literature on innovation and growth aspirations with insights from institutional theory and economic crisis. The results show that socially and environmentally oriented entrepreneurs, compared to their commercial counterparts, are more innovative and growth-aspiring (especially, in the context of the economic crisis). The findings also provide evidence of the important role of the contextual factors, in particular, three institutional pillars (regulatory, cognitive and normative institutions) as well as the change in the economic climate (economic crisis), in influencing these relationships. Specifically, government activism (representing regulatory institution) and postmaterialism cultural values (representing cognitive institution) intensify the positive relationship between the pursuit of social goals and the engagement in product innovation while socially supportive cultural norms (representing normative institution) attenuate this association. When considering the impact of the economic crisis, the study finds the mediating effect of perceived competition on the positive relationship between the pursuit of social/environmental goals on growth aspirations.

Altogether, the thesis advances our understanding of the important role of the interplay of individual and contextual variables in social and environmental entrepreneurship, in both formation and post-formation stages, which is underdeveloped in the existing literature. This study also offers new insights into social and environmental entrepreneurship by revealing the motivation heterogeneity of social and environmental entrepreneurship. Thereby, the research provides a new approach in researching motivations of socially and environmentally oriented entrepreneurs (opportunity-necessity motivation perspective), complementing the existing emphasis on pro-social and pro-environmental motivations. Besides, the thesis paves the way for future both theoretical and empirical research into social and environmental entrepreneurship by introducing innovation and employment growth aspirations as their important consequences.

Keywords: social and environmental goals, opportunity-necessity motivation, innovation, growth aspirations, Global Entrepreneurship Monitor

Acknowledgements

I would like to devote the first page of the thesis to express my gratitude to those who have contributed to this thesis.

First, I am immensely grateful to my supervisors. I feel blessed to have such great supervisors. This thesis would not have come into existence without their all support.

I would like to send deep thanks to my main supervisor, Prof Tomasz Mickiewicz. It has been delightful for me to be able to learn a lot from his deep knowledge during the past years. Besides, his generosity, patience, and expert manner of supervision as well as his constant support in all matters, academic and otherwise, has been worthwhile to me.

My most heartfelt and sincere appreciation goes to my associate supervisor, Prof Ute Stephan, who has given me a wonderful chance to start my PhD journey at Aston University. Her constructive feedback based on her in-depth knowledge and keen eyes have enlightened and elevated my understanding of not only this thesis but also the highest standards of professionalism. The immense guidance alongside generous encouragement and support that she has provided me throughout the PhD journey has been invaluable. She is really an excellent role model for my future career.

I would like also to give a special thank my associate supervisor, Assistant Prof Emma Folmer. I highly appreciate her time and willingness to support me along with her suggestions for this thesis. Her enthusiasm has been a source of strong motivation for my PhD journey.

Additionally, I would like to thank the members of the Postgraduate Research Administration Team in the Aston Business School, who have provided me helpful advice and support on administrative matters relating to PhD programmes. The collaborative and stimulating environment at Aston University has been a fantastic place to learn.

Last but not least, I must express my gratitude to my family and friends for their everlasting belief and endless support for me under all circumstances. I would not have gotten this far without them. This thesis is dedicated to my family.

List of contents

List of tables

List of figures

Chapter 1 Introduction

1.1 Introduction

Humankind is facing social and environmental issues such as poverty, inequality, climate change and environmental degradation (Fonseca and Carvalho, 2019). As such, social and environmental entrepreneurs, who pursue social and environmental value creation goals through market-based methods (Doherty, Haugh, and Lyon, 2014), play a key role in alleviating such challenges. Indeed, the literature is recognized that social and environmental entrepreneurship can provide solutions to confront poverty (Tobias, Mair and Barbosa-Leiker, 2013), empower women (Datta and Gailey, 2012), foster inclusive growth (Ansari, Munir, and Gregg, 2012). Not surprisingly, social and environmental entrepreneurship becomes a research domain of great significance for governments and academics. Indeed, the literature shows a substantial development in the number of articles and publications on social and environmental entrepreneurship (Gupta et al., 2020).

There are three salient research streams on factors shaping social and environmental entrepreneurial activities. The first stream, rooted in individual-level analysis, explores the characteristics of social and environmental entrepreneurs. That is because stable character differences between individuals are supposed to help us to understand why certain individuals but not others engage in social and environmental entrepreneurial activities. Past research reveals whilst social and environmental entrepreneurial activities are primarily (but not always) driven by pro-social and pro-environmental concerns, other motivations are also important antecedents to predict social and environmental entrepreneurs' actions (e.g., opportunity-oriented social entrepreneurship) (Stephan and Drencheva, 2017 for a review; Drencheva et al., 2021). Yet, extant research on the individual level social and environmental entrepreneurship pays much attention to pro-social and pro-environmental personality but ignore the role of other motivations in social and environmental entrepreneurial activities, for instance, social entrepreneurship out of necessity or to take advantage of an opportunity (see reviews: Gast, Gundolf, and Cesinger, 2017; Saebi, Foss and Linder, 2019). Additionally, this research stream typically focuses on the social and environmental venture formation phase, but seemly overlooks important outcomes of individual-level factors (e.g., innovation, internationalisation and growth aspirations) (Saebi et al., 2019).

The second stream, rooted in country-level or multi-level analysis, explore the relationship between the context and social/environmental entrepreneurship. Social and environmental entrepreneurial activities do not occur in a vacuum, instead, are embedded in the context where these activities take place. Thus, previous research identifies contextual conditions as determinants of social and environmental entrepreneurship (Nicholls, 2008; Zahra et al., 2008). In this research stream, empirical studies often draw on institutional theory and cultural theory perspectives. They point to the important role of formal (e.g., taxes, regulations, governmental activism), informal institutions (e.g., environmental pressure), cultural factors (e.g., in-group collectivism, interpersonal trust, postmaterialism cultural values, socially supportive cultural norms) and even their joint effects in social and environmental entrepreneurial activities (Hechavarria, 2016a; Hoogendoorn, 2016; Hörisch, Kollat, and Brieger, 2017; Pathak and Muralidharan, 2016; Stephan, Uhlaner and Stride, 2015). Furthermore, theoretical studies, in this research stream, suggest the positive outcomes of social and environmental entrepreneurship, such as, alleviate poverty (Tobias et al., 2013), empower women (Datta and Gailey, 2012), catalyze social transformation (Alvord et al., 2004), foster inclusive growth (Ansari et al., 2012), promote the transition to sustainable development (York and Venkataraman, 2010) and bring about institutional change (Nicholls, 2010). However, we still lack empirical research on consequences of social and environmental entrepreneurship (see reviews: Gast et al., 2017; Saebi et al., 2019).

The third stream, rooted in multilevel analysis, investigates how the interplay of individual and contextual factors shape social and environmental entrepreneurial activities. Entrepreneurial action and outcome, which cannot be explained by alone knowledge about the person or the context, instead are considered as a result of both individual and contextual factors (Davidsson, 2015). In addition, social and environmental entrepreneurship is considered an intrinsically multilevel phenomenon and conducting research at only one level risks misinterpreting its nature (Saebi et al., 2019). Thus, this research stream might provide a better account for the heterogeneity in social and environmental entrepreneurship than the two preceding ones. Yet, compared to the body of literature on other streams, research on the interplay of individual and contextual factors is surprisingly scant. These studies look into how social and environmental entrepreneurship is shaped by the interaction of various contextual factors (such as institutions, culture, macro-economic…) and few individual factors, for instance, age

(Brieger et al., 2020), gender (Brieger et al., 2019; Hechavarría, 2016a; Hechavarría et al., 2017), individual resources (Brieger and De Clercq, 2019), human capital (Estrin, Mickiewicz and Stephan, 2016). Yet, this research stream lacks research on the interplay between contextual conditions and entrepreneurial motivation that is considered as one important antecedent to predict social and environmental entrepreneurial activities. Moreover, we know very little about how the consequences of social and environmental entrepreneurship are shaped by the association between individual and contextual factors (Hoogendoorn et al., 2020).

Therefore, to advance our understanding of social and environmental entrepreneurship, the thesis follows the third stream to explore the interaction of individual and contextual factors in social and environmental entrepreneurial activities, which does not attract sufficient attention. This is because entrepreneurship is the result of both the individual and the environment, whereby, it cannot be explained only by referring to individual characteristics without taking into account the context where they are embedded (Shane and Venkataraman, 2000). It is important to look at the interplay between individual and contextual factors that might provide a better account for the heterogeneity in social and environmental entrepreneurial activities rather than over-individualized or over-contextualized approaches.

In parallel, the thesis aims to address the gaps in three research streams in regard to motivations and consequences of social and environmental entrepreneurship. On one hand, an attempt, in this thesis, would be made to explicate how the pursuit of social and environmental goals is shaped by the interplay of contexts and entrepreneurial motivations. Moving beyond simply equating social and environmental entrepreneurship with pro-social and pro-environmental motivations, this research aims to shed light on other motivations of socially and environmentally oriented entrepreneurs (in particular, opportunity-necessity motivation perspective), which is typically overlooked in the previous literature.

On the other hand, the launch of a social and environmental venture is only a step toward attaining the goals: social and environmental value creation. It is important to consider the potential or actual consequences of social and environmental entrepreneurship instead of stopping at researching on the launch of the venture. Therefore, the thesis strives for exploring the outcomes of the pursuit of social and environmental goals alongside the role of the contexts in this link, which social and environmental

entrepreneurship literature says very little about. The following sections of this chapter would further explain which entrepreneurial motivations and consequences the thesis focuses on, concomitantly, why it is important to understand them.

Next, this chapter defines key concepts of this thesis by four sections: (1) The first section introduces the distinctions between the pursuit of economic, social and environmental goals; (2) The second section reviews the literature on entrepreneurial motivations in social and environmental entrepreneurship before explaining why this thesis focuses on opportunity/necessity motivation perspective; (3) After a brief literature review, the third section justifies why the thesis looks at innovation and employment growth aspirations as consequences of the pursuit of social and environmental goals; (4) The fourth section explains the important role of contextualizing social and environmental entrepreneurial activities alongside introduces about contextual approaches applied in this thesis. This chapter then concludes by presenting two research questions of this thesis and outlining the summary of empirical chapters.

1.2 The pursuit of goals

According to the strategic goal literature (Baum, Locke, and Kirkpatrick, 1998; Palmer and Short, 2008; Williams, 2008), goals refer to desirable future states that an organization endeavours to achieve. Goals provide criteria and direction for making decisions of an organization and through that may shape organizational performance (Baum et al., 1998; Palmer and Short, 2008). As entrepreneurs are those who initiate, create, lead and carry out activities in their organizations (Baumol, 1968), especially at the start of an organization, the goals of entrepreneurs are reflected through the ones of their own organizations (Shane, Lock and Collins, 2003). Thus, this thesis considers the pursuit of certain goals of an organization as the desired goals that entrepreneurs seek to attain through their business.

Goals in entrepreneurship used to be known as a focus on economic goals, that is creating profit for entrepreneurs and their partners. Indeed, traditionally, goals for starting a business are considered to be economic (Schumpeter, 1934). Accordingly, the entrepreneur is defined as an individual who does something for economic gain (Carsrud and Brännback, 2009). Yet, the recent literature notices an increasingly broader understanding of the heterogeneity of entrepreneurship (Schaefer, Corner, and

Kearins, 2015; Schaltegger and Wagner, 2011; Thompson, Kiefer, and York, 2011; Welter, Baker, Audretsch and Gartner, 2017) that is constituted from the diversity in goals (Welter et al., 2017; Zahra and Wright, 2016). Social and environmental entrepreneurship is an example of such goal heterogeneity. Accordingly, besides the economic goals, entrepreneurs may pursue social or/and environmental goals, which create desirable outcomes for not only the organization but also stakeholders, society and the environment (Elkington, 2004). Although both social and environmental goals reflect caring about other-regarding interests instead of self-regarding ones (e.g., economic goals). Besides, there are salient differences between them. Thus, many scholars emphasize the importance of clarifying the boundaries and distinguishing between social and environmental goals in research (Schaefer et al., 2015; Schaltegger and Wagner, 2011; Thompson et al., 2011).

The pursuit of social goals reflects an entrepreneur's propensity to direct their organization's activities towards the creation of social value. Socially oriented entrepreneurs care for the alleviation of social issues (Thompson et al., 2011) such as poverty and poor living condition, inequality, social exclusion, public health issues. These entrepreneurs focus on solving societal problems (Mair and Marti, 2006; Short, Moss and Lumpkin, 2009; Zahra et al., 2009) through providing goods to marginalised and disadvantaged groups or providing access to innovation for deprived market segments.

The pursuit of environmental goals reflects an entrepreneur's propensity to direct their organization's activities towards the creation of environmental value (preservation and regeneration of the natural environment) (Dean and McMullen, 2007; Schaltegger, 2002; York and Venkataraman, 2010). Environmentally oriented entrepreneurs focus on solving environmental problems through their business (Thompson et al., 2011) such as providing eco-friendly products and services; preventing pollution; recycling, producing clean energy; building an environmental management system.

1.3 Entrepreneurial motivations in social and environmental entrepreneurship

Entrepreneurial motivations, in the literature, are seen as an outcome of both personal and contextual factors (Carsrud and Brännback, 2011). Take, for example, a young woman who leaves from well-paid job to pursue a business. That is because she recognizes an attractive business opportunity as well as her good resource position. In contrast, another young woman becomes an entrepreneur as she is driven

by what could be described as survival needs, that is to earn enough money to be able to support herself and her family.

Previous research points to substantial heterogeneity of social and environmental entrepreneurs' motivations (Stephan and Drencheva, 2017 for a review; Drencheva et al., 2021). Yet, the reviews of social and environmental entrepreneurship literature show an emphasis on pro-social and pro-environmental motivations in the majority of the existing studies (see reviews: Gast et al., 2017; Saebi et al., 2019). This, on one hand, hinders our understanding of the importance of different motivations in social and environmental entrepreneurship. As a result, previous research appears to more focus on the role of social and environmental goals in social and environmental enterprises (Stevens, Moray and Bruneel, 2015) and how social and environmental goals needs to be protected or balanced against economic ones (Smith and Besharov, 2019).

On the other hand, the over-emphasis on pro-social and pro-environmental motivations may lead to a focus on describing the positive aspects of social and environmental entrepreneurs but ignore other possibilities. Take research on opportunity/necessity motivation in social and environmental entrepreneurship as an example. Among a variety of theories of entrepreneurial motivation, the longest standing concept built by Stoner and Fry (1982) distinguishes between opportunity and necessity entrepreneurship, which is based on the pull/push motivation perspective. Yet, contrary to a large number of studies on the opportunity/necessity motivation in commerical entrepreneurship (Stephan et al., 2015 for a general review), we know very little about the difference between opportunity and necessity motivation in social and environmental entrepreneurship (Yitshaki and Kropp, 2016). Even, the literature is essentially silent on the possibility of engagement of necessity entrepreneurs in social and environmental entrepreneurship.

This may originate from two prevailing perspectives. First, it is often assumed that social and environmental entrepreneurs are those who proactively choose entrepreneurship to generate values for people and the environment due to their pro-social and pro-environmental motivations (Hockerts, 2017; Miller et al., 2012; Ruskin et al., 2016; Stephan and Drencheva, 2017 for a review). Hence, the pursuit of social and environmental goals appears to be more compatible with opportunity entrepreneurs than with necessity entrepreneurs, those who are forced to become entrepreneurs. Second, it is commonly

supposed that necessity entrepreneurs are less willing to pursue social and environmental goals. This is because necessity entrepreneurs are commonly thought to focus on short-term benefits (immediate rewards) rather than long-term and ambiguous ones like those related to social and environmental issues. As a result, they are less likely to value social and environmental goals over economic goals. However, on the other hand, some suppose that necessity entrepreneurs might be compatible with social and environmental goals. Since necessity entrepreneurs often prevail in impoverished settings where there are numerous unmet social and environmental needs, they may understand better the social and environmental issues which arise from such environments. Thus, social and environmental entrepreneurship is something that necessity entrepreneurs are drawn to due to personal experiences, that it is familiar to them. Yet, so far, due to a lack of empirical evidence, we do not know whether necessity entrepreneurs are less willing to pursue social and environmental goals than opportunity entrepreneurs.

Taken together, to shed light on the heterogeneity in social and environmental entrepreneurs' motivations in general, this thesis explores the differences between opportunity and necessity entrepreneurs in pursuing social and environmental goals.

1.4 Consequences of social and environmental entrepreneurship: Innovation and Employment Growth Aspirations

The ambitious entrepreneur is defined as "someone who engages in the entrepreneurial process with the aim to create as much value as possible" (Stam, Bosma and van Witteloostuijn, 2012, p.26) and this value creation being exposed in terms of performance indicators such as growth aspirations and innovation (Hermans et al. 2015). Innovative or growth-aspiring entrepreneurs are viewed as more significant contributors to economic growth than other entrepreneurs in general (Bosma, Schutjens and Stam, 2009; Stam, Suddle, Hessels and Van Stel, 2009; Stam, Hartog, Van Stel and Thurik, 2011) and they even are likely to be more resilient to economic crisis (Giotopoulos, Kontolaimou and Tsakanikas, 2017b). While we know that commercial entrepreneurship is an important source of innovation and job creation (Carree, and Thurik, 2010; Wong, Ho and Autio, 2005), we don’t know whether the pursuit of

social and environmental goals hinder or facilitate an entrepreneur's innovation and aspirations to create employment.

More specifically, notwithstanding the existing theoretical literature shows the consensus of the important role of innovation in social and environmental entrepreneurial activities (Austin et al., 2006; Dean and McMullen, 2007; Peredo and McLean, 2006; Schaltegger and Wagner, 2011; Zahra et al., 2009), empirical research on the link between the pursuit of social and environmental goals with innovative activities is limited (Hoogendoorn, van der Zwan and Thurik, 2020; Stephan, Andries, and Daou, 2019). Likewise, apart from several theoretical discussions with different views of the extent of growth aspirations of socially or environmentally oriented entrepreneurs (Andre´ and Pache, 2016; Battilana and Dorado 2010; Dees et al., 2004; Lumpkin et al., 2013; Shaw and Carter, 2007; Weerawardena and Mort, 2006; Dees et al., 2004; Zahra et al., 2008), we know very little empirically about how the pursuit of social and environmental goals influence entrepreneurs' employment growth aspirations. Therefore, to advance our under-developed understanding of the consequences of social and environmental entrepreneurship at the individual level (see reviews: Gast et al., 2017; Saebi et al., 2019), this thesis investigates whether the pursuit of social and environmental goals influence an entrepreneur's innovation and aspirations to create jobs.

1.5 Contextualizing socially and environmentally oriented entrepreneurial activities

In entrepreneurship research, "context refers to circumstances, conditions, situations, or environments that are external to the respective phenomenon and enable or constrain it" (Welter, 2011, p.167). The important role of contextualization in entrepreneurship research is emphasised in much literature (Welter, 2011; Welter et al., 2017; Welter and Gartner, 2016). As the context is diverse and multi-faceted (Welter, 2011), reflects through different perspectives: "who, when and where" dimensions (Welter, 2011). From a contextual perspective, the "who" dimension points to who enters entrepreneurship and which ventures are created. The "when" dimension includes historical and temporal contexts, referring to historical influences on entrepreneurship and changes in the contexts over time. The "where" dimension refers to the locations in which entrepreneurship happens. Yet, this

thesis only focuses on the "where" dimension of contexts and in particular, cultural, institutional and economic approaches.

Entrepreneurial action and outcome are considered as a result of both individual and contextual factors (Davidsson, 2015). Accordingly, social and environmental entrepreneurial activities are unlikely to be explained by either individual characteristics or contexts. Instead, research on the interaction between individual and contextual factors may provide a sufficient account for heterogeneity in social and environmental entrepreneurial activities. However, up to date, research on how the interplay of individual and contextual factors shapes social and environmental entrepreneurial activities is limited. Previous studies focus on individual factors (e.g., age, gender, individual resources and human capital) and several contexts, such as rule of law (Estrin et al., 2016), cultural values (Brieger and De Clercq, 2019; Hechavarría, 2016a; Hechavarría et al., 2017), human empowerment (Brieger et al., 2019) and institutional quality (Brieger et al., 2020). Especially, the literature is essentially silent on how the pursuit of social and environmental goals is shaped by the interplay between contextual conditions and entrepreneurial motivations that are typically considered as one important antecedent to predict social and environmental entrepreneurship. Likewise, our understanding of the role of context in the relationship between the pursuit of social and environmental goals and their consequences is underdeveloped (for an exception Hoogendoorn et al., 2020).

Accordingly, to advance our understanding of how the interplay of individual and contextual factors influence social and environmental entrepreneurial activities, this thesis investigates the moderating effects of the contexts through two different conditions, are stable and unstable contextual ones. On one hand, the thesis considers cultural and institutional approaches as the two stable contextual conditions, which may play the role as the moderators in the relationship between entrepreneurial motivations (opportunity/necessity motivation perspective) and the pursuit of social/environmental goals alongside the relationship between the pursuit of social/environmental goals and their consequences (innovation and employment growth aspirations).

First, differences in entrepreneurial activities across countries cannot be explained by only economic factors (Freytag and Thurik, 2007). Thus, many researchers turn to cultural factors and find the impacts of national culture on not only commercial entrepreneurship but also social and

environmental entrepreneurship (Hechavarría, 2016a; Hechavarría, 2016b; Hechavarría et al, 2017; Hoogendoorn, 2016; Stephan et al., 2015). Accordingly, to advance our understanding of the interaction between the contexts and the individual factors in social and environmental entrepreneurial activities, the thesis considers national culture as moderators. More particularly, the thesis looks at two different concepts of national culture are cultural values and cultural descriptive norms (House et al., 2004), which are supposed to influence entrepreneurship through two different mechanisms.

National culture is known as "shared motives, values, beliefs, identities, and interpretations or meanings of significant events that result from common experiences of members of collectives that are transmitted across generations" (House et al., 2004, p.15). While cultural values represent shared aspirations or ideals of how people in the society should behave, cultural descriptive norms represent descriptive norms that reflect shared perceptions of how most people actually behave (Stephan and Pathak, 2016; Stephan and Uhlaner, 2010). Thus, considering both can enhance our understanding and explanation of how cultural values differ descriptive norms in shaping social and environmental entrepreneurial activities. Yet, so far, empirical research integrating both cultural values and descriptive norms in social and environmental entrepreneurship literature remains scarce (an exception for Stephan et al., 2015). Previous studies focus on the moderating role of only cultural values rather than both cultural values and descriptive norms on social and environmental entrepreneurial activities (Brieger and De Clercq, 2019; Hechavarría, 2016a; Hechavarría et al., 2017).

Second, institutional theory becomes an increasingly common lens in contextualization in not only commercial entrepreneurship (Su, Zhai and Karlsson, 2017; Urbano, Aparicio and Audretsch, 2019) but also social and environmental entrepreneurship research (Zahra, Rawhouser and Bhawe, 2008). Institutions refer to "the deeper and more resilient aspects of social structure", which "become established as authoritative guidelines for social behavior" (Scott, 2005, p.2). Formal institutions refer to the constraints and incentives formed as laws, regulations and rules that aim to guide individual and organizational actions (Scott, 2005). Informal institutions are more implicit, slowly changing, culturally transmitted (Stephan et al., 2015), reflect the social arrangements and norms that influence how formal institutions operate in practice. One can look at culture in institutional theory, whereby cultural values and norms align both cognitive and normative institutions respectively. Indeed, Scott (2007) extends

institutional theory by formulating a three-pillar framework of institutional forces: regulatory, cognitive and normative. The regulative pillar stem primarily from governmental legislation and industrial agreements and standards (Bruton, Ahlstrom and Li, 2010; Scott, 2007). While the structures of cognitive and normative pillars can be transmitted by culture (DiMaggio and Powell, 2012; Jepperson, 1991), there are differences between the two types of informal institutions. The cognitive institutional pillar includes taken-for-granted elements and shared understanding (Scott, 2007), which is closely connected to cultural values. The normative pillar represents social standards and expectations on actions that organizations and individuals ought to take (Bruton et al., 2010; Scott, 2007), which is associated with descriptive norms in a particular cultural context (Javidan et al., 2006; Stephan and Uhlaner, 2010).

Prior literature provides empirical evidence that social and environmental entrepreneurship is highly influenced by institutional factors including regulatory (e.g., taxes, regulations, governmental activism), cognitive (e.g., postmaterialism cultural values), normative institutions (e.g., socially supportive cultural norms) and even their joint effects in social and environmental entrepreneurial activities (Hechavarria, 2016; Hoogendoorn, 2016; Hörisch, Kollat, and Brieger, 2017; Pathak and Muralidharan, 2016; Stephan, Uhlaner and Stride, 2015). Yet, we know very little about the moderating effects of institutional factors on social and environmental entrepreneurial activities (Brieger and De Clercq, 2019; Brieger et al., 2019; Brieger et al., 2020; Estrin et al., 2016; Hechavarría, 2016a; Hechavarría et al., 2017). Accordingly, to advance our understanding of contextualizing social and environmental entrepreneurship, this thesis applies the institutional factors as moderators to research social and environmental entrepreneur activities, which is overlooked in previous research.

On the other hand, to further improve our understanding of contextualizing social and environmental entrepreneurship, the thesis also explores how the change in the context, specifically, in the economic climate such as the economic crisis impact socially and environmentally oriented entrepreneurial activities. Entrepreneurial activities are also considered as highly dependent on how the change of the current economic climate, e.g., economic crisis (Klapper and Love, 2011). Especially, as the effects of an economic crisis deepen social and environmental issues (Quelch and Jocz, 2009), social and environmental entrepreneurship become critical due to their significant contribution in

tackling the detrimental impacts of the crisis, as well as advancing the quick recovery of a country. Surprisingly, there is no research investigating the impact of the economic crisis on social and environmental entrepreneurial activities. Thus, this thesis investigates the mechanism by which social and environmental entrepreneurial activities are shaped by the impacts of the economic crisis.

1.6 Research questions and structure of the thesis

As discussed in the sections above, the underlying premise of this thesis is to deepen our understanding of the interplay between the individual and the contextual factors in social and environmental entrepreneurial activities. Furthermore, the thesis attempts to fulfil research gaps regarding entrepreneurial motivations, consequences and contextualization in social and environmental entrepreneurship literature, which appears to be overlooked in the existing studies. Consequently, this thesis aims to answer two following research questions:

Research question 1: *How is entrepreneurs' pursuit of social and environmental goals shaped by the interplay of entrepreneurial motivation and contexts?*

More particularly, to answer the first research question, the thesis explores the difference between opportunity and necessity entrepreneurs in pursuing social and environmental goals as well as the moderating effects of both cultural values and descriptive norms on this association.

Research question 2: *How are entrepreneurial consequences shaped by the interplay of entrepreneurs' pursuit of social/environmental goals and contexts?*

More specifically, to answer the second research question, the thesis investigates the link between the pursuit of social/environmental goals and innovative activities alongside the moderating role of three institutional factors on this link. Besides, the thesis also looks into the impact of the pursuit of social/environmental goals on entrepreneurs' growth aspirations and the mechanism by which the growth aspirations of entrepreneurs pursuing social/environmental goals is shaped by the economic crisis.

Accordingly, an empirical design is introduced that comprises three empirical studies, each of which considers the interplay between individual-level and contextual-level factors on socially and

environmentally oriented entrepreneurial activities. The schematic representation of the empirical design is shown in Figure 1.1 below.

This thesis attempts to answer two research questions by conducting three empirical studies. Since all chapters aim to address the overarching research question, they fit together and are interrelated theoretically, conceptually, and empirically. All three empirical studies consider cross-level effects by combining the influence of individual-level and contextual level factors on socially and environmentally oriented entrepreneurial activities. Accordingly, some minor overlaps are unavoidable in fostering the overall readability of the thesis in general and individual chapters in particular.

This thesis is divided into five chapters. Chapter 1 is the introduction of the thesis. In chapters 2 to 4, three empirical findings are presented. Chapter 2 titled "The differences between opportunity and necessity entrepreneurs in pursuing socio-environmental goals across cultural context" presents how the difference in entrepreneurial motivations (opportunity and necessity) influence the pursuit of social and environmental goals. This chapter also shows how cultural values and descriptive norms moderate this relationship. Chapter 3 titled "Innovation of entrepreneurs pursuing social and environmental goals across institutional contexts" explain how goal heterogeneity (economic, social or environmental goals) influence the entrepreneurs' engagement in innovative activities. The moderating effects of both three institutional pillars on this link are also presented in this chapter. Chapter 4 titled "Growth aspiration of entrepreneurs pursuing social and environmental goals during the economic crisis" analyses how the pursuit of social and environmental goals affects the entrepreneurs' growth aspirations in terms of employment and the mechanism by which growth aspirations of socially and environmentally oriented entrepreneurs are shaped by the impact of the economic crisis. Finally, chapter 5 summarizes the main findings of this thesis and underscores the major contributions and implications. The limitations of this thesis are also presented, along with some suggestions for further research. A summary of the three empirical studies is provided in Table 1.1 below.

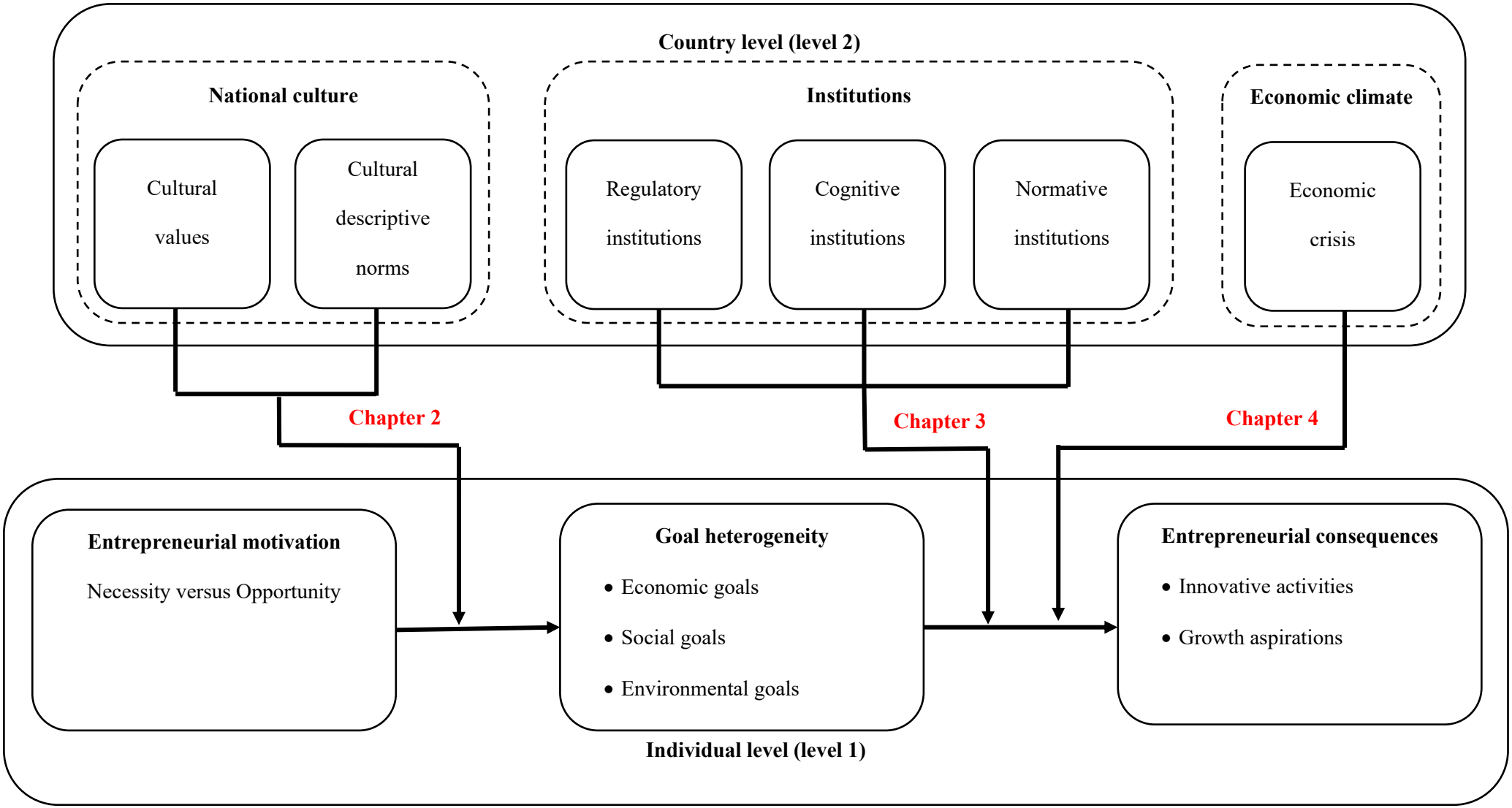


Figure 1.1 Empirical design of the thesis

Table 1.1 Thesis overview

Empirical chapters	Chapter 2	Chapter 3	Chapter 4
Research questions	2.1. How is the difference between opportunity and necessity entrepreneurs in pursuing social and environmental goals? 2.2. How do cultural contexts influence the difference between opportunity and necessity entrepreneurs in pursuing social and environmental goals?	3.1. How does the pursuit of social and environmental goals affect the engagement of entrepreneurs in innovative activities? 3.2. How do institutional contexts influence the link between the pursuit of social and environmental goals and innovative activities?	4.1. How does the pursuit of social and environmental goals affect entrepreneurs' growth aspirations? 4.2. How does the context of the economic crisis influence the relationship between the pursuit of social and environmental goals and entrepreneurs' growth aspirations?
Theoretical framework	• Entrepreneurial motivation: opportunity/necessity motivation perspective • National culture theory (cultural values and descriptive norms)	• Goal heterogeneity view • Institutional theory	• Goal heterogeneity view • Economic crisis
Research design	• 3,145 young entrepreneurs in 26 countries from GEM 2009 • Multi-level linear regressions (random intercept)	• 2,895 young entrepreneurs in 26 countries from GEM 2009 • Multi-level logistic regressions (random intercept and slopes)	• 5,605 young entrepreneurs in 48 countries from GEM 2009 • Multi-level linear regressions (random intercept)

			• MSEM (Multilevel structural equation modelling)
Key findings	• The propensity of the pursuit of socio-environmental goals (combination between social and environmental goals) of necessity entrepreneurs is stronger than that of opportunity entrepreneurs. • Whereas cultural descriptive norms (Socially supportive culture (SSC) and Performance-based culture (PBC)) moderate the difference between necessity and opportunity entrepreneurs in pursuing socio-environmental goals, cultural values (Post-materialism (PM) do not. • SSC attenuates the relationship between necessity-opportunity entrepreneurship and the pursuit of socio-environmental goals, that	• Entrepreneurs who pursue social or environmental (relative to economic) goals are more innovative. While the pursuit of social goals is positively related to the engagement in both product innovation and process innovation, the pursuit of environmental goals is positively related to the engagement in product innovation. • All three institutional pillars (Government activism (GA), Post-materialism cultural values (PM) and Socially supportive cultural norms (SSC)) significantly moderate the link between the pursuit of social goals and innovative activities, the propensity to engage in innovative activities of	• Entrepreneurs who pursue social or environmental (relative to economic) goals have more aspirations in terms of employment growth. While the pursuit of social goals only affects short-term growth aspirations, the pursuit of environmental goals has a positive link with both short-term and long-term growth aspirations. • The pursuit of social and environmental goals has positive indirect effects on growth aspirations through the perception of the lower competition intensity in the market during the economic crisis while

	is, the difference between the opportunity and necessity entrepreneurs in pursuing socio-environmental goals is more pronounced in countries with lower levels of SSC, and weaker in countries with higher levels of SSC. • PBC amplifies the relationship between opportunity-necessity entrepreneurship and the pursuit of socio-environmental goals, that is, the difference between the opportunity and necessity entrepreneurs in pursuing socio-environmental goals is weaker in countries with lower levels of PBC, and stronger in countries with higher levels of PBC.	environmentally oriented entrepreneurs is not influenced by institutional contexts. • GA reinforces the positive effect of the pursuit of social goals on the engagement of entrepreneurs in product innovation. • PM reinforces the positive effect of the pursuit of social goals on the engagement of entrepreneurs in product innovation. • SSC attenuates the positive effect on the pursuit of social goals on the engagement of entrepreneurs in product innovation.	no significant mediating effects from opportunity perception in the crisis.

Chapter 2

The difference between opportunity versus necessity entrepreneurs in pursuing socio-environmental goals across cultural contexts

Abstract

Based on a multilevel analysis of 3,145 young entrepreneurs in 26 countries from GEM 2009 data, we explore the entrepreneurial motivation of the pursuit of socio-environmental goals. We draw attention to overlooked research in the literature on the difference between opportunity and necessity motivation in socio-environmental entrepreneurship. The finding showcases that necessity entrepreneurs are more socio-environmentally oriented than opportunity entrepreneurs. Additionally, the study investigates how this difference is shaped by cultural contexts. We find that cultural norms in socially supportive and performance-based societies moderate this difference while cultural values in postmaterialism do not. Accordingly, these findings open up a new promise for the research on heterogeneity in socio-environmentally oriented entrepreneurs' motivation, complementing the existing emphasis on pro-social and pro-environmental motivation in literature. The study also widens our understanding of the crucial role of cultural contexts for social and environmental entrepreneurship.

Keywords: Social and environmental goals, opportunity-necessity motivation, culture values, cultural norms, Global Entrepreneurship Monitor

2.1 Introduction

Socio-environmentally oriented entrepreneurship consists of entrepreneurial activities and processes focusing on creating value for people, society and the environment. It is increasingly attracting scholarly attention due to its potential to deliver solutions to social and environmental challenges, such as poverty, inequality and climate change (Battilana and Lee, 2014; Klewitz and Hansen, 2014; Phillips et al., 2015). Socio-environmental entrepreneurs are those who initiate, lead and carries out entrepreneurial activities (Zahra et al., 2009). Accordingly, the motivation of entrepreneurs pursuing socio-environmental goals becomes a crucial topic on socio-environmental entrepreneurship, which attracts the interest of academics, practitioners, and governments (see reviews: Gast et al., 2017; Saebi et al., 2019).

Previous research points to substantial heterogeneity of social and environmental entrepreneurs' motivations (Stephan and Drencheva, 2017 for a review; Drencheva et al., 2021). Yet, existing research mainly focuses on pro-social and pro-environmental motivation (Hockerts, 2017; Miller et al., 2012; Ruskin et al., 2016; Stephan and Drencheva, 2017 for a review) leading to an over-emphasis on the positive characteristics of social and environmental entrepreneurs but ignore other possibilities. We can take opportunity/necessity motivation in social and environmental entrepreneurship as an example. Opportunity entrepreneurs actively pursue entrepreneurship by business opportunities (Reynolds et al., 2005) while necessity entrepreneurs are pushed into entrepreneurship by undesirable circumstances (e.g., a lack of employment alternatives) (Reynolds et al., 2005). Whereas the existing literature offers crucial insights on the distinction between opportunity and necessity motivation in commercial entrepreneurship (Stephan et al., 2015 for a general review), we know little about how necessity entrepreneurs differ from opportunity entrepreneurs in terms of pursuing socio-environmental goals (Yitshaki and Kropp, 2016). Even, the literature is essentially silent on the possibility of pursuing socio-environmental goals by necessity entrepreneurs (Andersson, 2018).

This may come from two prevailing perspectives. On one hand, social and environmental entrepreneurs are often considered as those who proactively choose entrepreneurship to generate social and environmental value (Hockerts, 2017; Miller et al., 2012; Ruskin et al., 2016). Hence, opportunity

entrepreneurs are seemly more compatible with the "lofty image" of socio-environmentally oriented entrepreneurs. On the other hand, it is often assumed that necessity entrepreneurs are less likely to value social and environmental goals over economic goals. That is because necessity entrepreneurs focus on short-term benefits (immediate rewards) rather than long-term and ambiguous ones like those related to social and environmental issues. Such views unintentionally eclipse the possibility of the existence of the “reluctant entrepreneurs”- necessity entrepreneurs in socio-environmental entrepreneurship. Yet, to date, due to a lack of empirical evidence, we do not know whether necessity entrepreneurs are less willing to pursue social and environmental goals than opportunity entrepreneurs.

Furthermore, there are different measurements of opportunity entrepreneurship (see a review of Stephan et al., 2015). Besides recognising a gap in the market and taking advantage of a business opportunity, opportunity entrepreneurs are also depicted as those who seek either to increase their independence or to earn more money (Bosma et al., 2011). This distinction is important as some studies suggest that national drivers of entrepreneurship, in particular, economic development, GDP growth, and social security, differently influence a country’ incidence of independence motived entrepreneurship and increase-income-motivated entrepreneurship. Concomitantly, there is a substantial difference between independence and increase-income motivated entrepreneurship in driving entrepreneurial aspirations at the national level such as innovation, high-job-growth and export-oriented entrepreneurship (Hessels et al., 2008a; Hessels et al., 2008b). Yet, this differentiation is not picked up by research on socially and environmentally oriented entrepreneurial motivation.

Additionally, the importance of the context is emphasized in not only commercial entrepreneurship (Welter, 2011; Welter et al., 2017; Welter and Gartner, 2016) but also social and environmental entrepreneurship research (Zahra et al., 2008). Additionally, the literature shows that opportunity and necessity entrepreneurship differ dramatically across various contextual factors from the economic conditions (e.g., economic development, GDP growth), institutions (e.g., government effectiveness, rule of law, social welfare), to culture (Amorós, et al., 2017; Autio et al., 2013; Hessels et al., 2008a; Hechavarría and Reynolds, 2009; McMullen et al., 2008; Stephan and Uhlaner, 2010).

Thus, we expect that the difference between opportunity and necessity entrepreneurs in pursuing socio-environmental goals may be conditioned by contextual factors.

Differences in entrepreneurial activities across countries cannot be explained by only economic factors (Freytag and Thurik 2007). Thus, many researchers turn to national culture, which is defined as "shared motives, values, beliefs, identities, and interpretations or meanings of significant events that result from common experiences of members of collectives that are transmitted across generations" (House et al., 2004, p.15). They find the impacts of national culture on not only commercial entrepreneurship but also social and environmental entrepreneurship (Hechavarría, 2016a; Hechavarría, 2016b; Hechavarría et al, 2017; Hoogendoorn, 2016; Stephan et al., 2015). Likewise, when considering cross-country differences in entrepreneurial motivation, some studies look toward cultural factors to explain this variation (Autio et al., 2013; Hechavarria and Reynolds, 2009; Stephan and Uhlaner, 2010). Accordingly, we apply cultural theory to this research to extend our understanding of how national cultural contexts affect the differences between opportunity and necessity entrepreneurs in the pursuit of socio-environmentally oriented entrepreneurial activities.

Therefore, we address these gaps by investigating how necessity entrepreneurs differ from opportunity entrepreneurs in the propensity of the pursuit of socio-environmental goals (Research question 1). We also explore how cultural contexts influence the difference between opportunity and necessity entrepreneurs in pursuing socio-environmental goals (Research question 2).

Through integrating the cultural theory and the opportunity-necessity motivation perspective, we examine our predictions in a multilevel study of 3,145 new entrepreneurs in 26 countries. We find that the propensity of the pursuit of socio-environmental goals of necessity entrepreneurs is higher than that of opportunity entrepreneurs. We also identify the moderating effects of both cultural values and descriptive norms and find that societies' emphasis on socially supportive and performance-based norms are important in explaining the difference between opportunity and necessity entrepreneurs in pursuing socio-environmental goals.

Accordingly, our study makes several contributions to research on social and environmental entrepreneurship. First, our findings contribute a new positive perspective on the possibility to pursue

socio-environmental goals of necessity entrepreneurs compared to opportunity ones. We find that necessity entrepreneurs are more socio-environmentally oriented than opportunity ones. This contrasts the prevailing understanding of socio-environmental entrepreneurs as being opportunity-driven due to the over-emphasis on the pro-social and pro-environmental motivations of socio-environmentally oriented entrepreneurs in the existing literature (Hockerts, 2017; Hockerts and Wüstenhagen, 2010; Nga and Shamuganathan, 2010; Kirkwood and Walton, 2010; Miller et al., 2012; Ruskin et al., 2016) and thus opportunity entrepreneurs are more compatible with entrepreneurship for society and the environment than necessity entrepreneurs. Accordingly, this study paves the way for future both theoretical and empirical research on socially and environmentally oriented entrepreneurial motivations by applying other approaches on entrepreneurial motivations (e.g., opportunity-necessity motivation) instead of mostly focusing on pro-social and pro-environmental motivations. Second, this research also enriches the opportunity-necessity motivation literature by analysing the differentiation between independence motive, and the increase-income motive of opportunity entrepreneurs, which is overlooked in the previous studies (Hessels et al., 2008a; Hessels et al., 2008b). Third, our study advances the understanding of contextualizing social and environmental entrepreneurship. We find that societies' emphasis on socially supportive and performance-based norms are important in explaining the difference between opportunity and necessity entrepreneurs in pursuing socio-environmental goals while post-materialist cultural values do not. Our findings show that understanding the different impacts of cultural values and descriptive norms is important for researching the heterogeneity in entrepreneurial activities.

2.2 Research framework and hypotheses

2.2.1 The pursuit of socio-environmental goals

According to the strategic goal literature (Baum et al., 1998; Palmer and Short, 2008; Williams, 2008), goals refer to desirable future states that an organization endeavours to achieve. Goals provide criteria and direction for making decisions of an organization and through that may shape organizational performance (Baum et al., 1998; Palmer and Short, 2008). As entrepreneurs are those who initiate, create, lead and carry out activities in their organizations (Baumol, 1968), especially at the start of an organization, the goals of entrepreneurs are reflected through the ones of their own organizations (Shane et al., 2003). Thus, this research considers the pursuit of certain goals of an organization as the desired goals that entrepreneurs seek to attain through their business.

Goals in entrepreneurship used to be known as a single focus on economic goals, that is creating profit for entrepreneurs and their partners. Indeed, traditionally, goals for starting a business are considered to be economic (Schumpeter, 1934). Accordingly, the entrepreneur is defined as an individual who does something for economic gain (Carsrud and Brännback, 2009). Yet, the recent literature notices an increasingly broader understanding of the heterogeneity of entrepreneurship (Schaefer et al., 2015; Schaltegger and Wagner, 2011; Thompson et al., 2011; Welter et al., 2017) that is constituted from the diversity in goals (Welter et al., 2017; Zahra and Wright, 2016). Social and environmental entrepreneurship is an example of such goal heterogeneity. Accordingly, besides the economic goals, entrepreneurs may pursue social or environmental goals, which create desirable outcomes for not only the organization but also stakeholders, society and the environment (Elkington, 2004).

In this study, we focus on the integration of social and environmental value creation goals in the business (henceforth referred to as socio-environmental goals). The pursuit of socio-environmental goals reflects entrepreneurs' propensity to orientate their organizations towards the creation of not only social value but also environmental value (Thompson et al., 2011). Social value is value for people and society (Thompson et al., 2011), which can be generated through the alleviation of social issues such as poverty, inequality, social exclusion and health issues (Mair and Marti, 2006; Short et al., 2009;

Zahra et al., 2009). Environmental value relates to the preservation, regeneration of the natural environment (Thompson et al., 2011), which can be created through resolving environmental problems (Dean and McMullen, 2007; Schaltegger, 2002; York and Venkataraman, 2010). Therefore, socio-environmentally oriented entrepreneurs are those who strive for solving social and environmental issues through their business (Schaltegger and Wagner, 2011).

2.2.2 Entrepreneurial motivation (opportunity versus necessity motivation)

Motivation refers to a person's readiness to make an effort to achieve given desires through a process stemming from the interaction between individual goals and contextual factors (Latham and Pinder, 2005). Among a variety of theories of entrepreneurial motivation, the longest standing concept built by Stoner and Fry (1982) distinguishes between opportunity and necessity entrepreneurship, which is based on the pull/push motivation perspective. Opportunity entrepreneurs refer to those who are pulled into setting up a new venture due to taking advantage of a business opportunity whereas necessity entrepreneurs refer to those who are pushed into entrepreneurship due to lack of alternative employment options or unsatisfactory with their current situation. (Reynolds et al., 2001; Williams and Williams, 2014). Besides recognising a gap in the market and taking advantage of a business opportunity, opportunity entrepreneurs are also driven by internal motives: independence, self-realization, implementing ideas and personal development (Block and Wagner, 2010; Carsrud and Brannback, 2011; Marques et al., 2012). Conversely, necessity entrepreneurs are often pushed into entrepreneurship by external factors such as the escape from unemployment (Thurik et al., 2008; Rocha et al., 2015), family pressure in transferring the business to the new generation (Giacomin, et al., 2011), dissatisfaction with the current situation (Kirkwood and Walton, 2010) or discrimination at the workplace (Levie and Hart, 2013).

Compared to opportunity entrepreneurs, necessity entrepreneurs are often seen as having lower survival probability (especially during an economic crisis), less innovative, having limited growth potential, and imitating or replicating other businesses (Block and Sandner, 2009; Dencker et al., 2009; Maas and Herrington, 2006; Simón-Moya et al., 2016). However, both opportunity and necessity

entrepreneurs are recognized to play an important role in economic development (Amorós et al., 2017; Brewer and Gibson, 2014). Indeed, longitudinal research in the UK shows that necessity and opportunity entrepreneurs show similar levels of innovation, growth, and exporting (Stephan et al., 2015). Especially, in impoverished settings where necessity entrepreneurs prevail, they make important contributions to poverty alleviation through providing employment to themselves and sometimes to others (Dencker et al., 2019; Shepherd et al., 2020).

2.2.3 Entrepreneurial motivation and the pursuit of socio-environmental goals

The research on the possibility of engagement of necessity entrepreneurs in socio-environmental entrepreneurship is conspicuously absent in the current literature, which may originate from two prevailing perspectives. First, it is often assumed that due to their pro-social and pro-environmental motivation, socio-environmentally oriented entrepreneurs are those who proactively choose entrepreneurship to generate values for people and the environment (Hockerts, 2017; Miller et al., 2012; Ruskin et al., 2016; Stephan and Drencheva, 2017 for a review). The pursuit of socio-environmental goals appears to be more compatible with opportunity entrepreneurs than with necessity entrepreneurs, those who are forced to become an entrepreneur. Second, it is commonly supposed that necessity entrepreneurs are less willing to pursue socio-environmental goals. This is because necessity entrepreneurs tend to concentrate on short-term benefits (immediate rewards) rather than long-term and more ambiguous ones like those related to socio-environmental issues. As a result, they are less likely to prioritise socio-environmental goals over economic goals for their businesses. However, so far, it is surprising that no research provides empirical evidence on if necessity entrepreneurs are less willing to pursue socio-environmental goals. We also know very little about the differences between opportunity and necessity entrepreneurs in socio-environmentally oriented entrepreneurial activities (Yitshaki and Kropp, 2016) while the research on the distinction between opportunity and necessity motivation in commercial entrepreneurship is well developed (Stephan et al., 2015 for a general review). Thus, to shed light on this gap in our understanding, this study offers the first step to examine the difference in the pursuit of socio-environmental goals between opportunity and necessity entrepreneurs.

Furthermore, in this paper, we consider several aspects that may differ between opportunity and necessity entrepreneurs. First, while opportunity entrepreneurs can choose a desirable career from several options, pursuing an entrepreneurial venture is the only viable option for necessity entrepreneurs. This points out that opportunity and necessity entrepreneurs will differ in perception of entrepreneurial opportunity (e.g, opportunity costs). Second, necessity entrepreneurs, compared to opportunity ones, may perceive themselves in a more disadvantaged status as necessity entrepreneurs often have fewer resources than opportunity ones (Block and Sandner, 2009; Bradley et al., 2011).

To nuance the dominant perspective on the difference between opportunity and necessity entrepreneurs in socio-environmental entrepreneurship, we propose three reasons why necessity entrepreneurs may be more likely to pursue socio-environmental goals than opportunity entrepreneurs. First, opportunity entrepreneurs are less likely to evaluate socio-environmental entrepreneurship positively. As opportunity entrepreneurs can choose a desirable career from numerous options, opportunity entrepreneurs may undervalue the socio-environmentally oriented entrepreneurial opportunity due to its lower attractiveness compared to the others. Opportunity entrepreneurs may recognise that socio-environmental entrepreneurship is about creating value for others and the environment, which may require more investments than commercial entrepreneurship, leading to detract economic benefits. For instance, if entrepreneurs want to generate jobs for those with disabilities or those who come from disadvantaged groups, there is a need to provide them with additional training. Likewise, if entrepreneurs want to diminish the harm to the environment, they need to invest in innovative and environment-friendly technologies. Besides, the nature of social and environmental issues is associated with complexity, high uncertainty and unconventional epistemic boundaries (Ferraro et al., 2015; Stephan et al., 2016). Hence, compared to economically oriented ones, socio-environmentally oriented entrepreneurial activities require more time and effort while entrepreneurs may only see positive results from their work over the longer term. Consequently, socio-environmental entrepreneurship may be considered less attractive in the eyes of opportunity entrepreneurs.

Second, while socio-environmentally oriented business is one of several options for opportunity entrepreneurs, socio-environmentally oriented business is something that necessity entrepreneurs are

drawn to due to personal experiences, that it is familiar to them. As Williams and Nadin (2011, 2012) point out, entrepreneurs in deprived areas tend to be more socio-environmentally oriented. That is because the business in such deprived areas often arises out of the needs identified in the community, that is predominantly social and environmental needs. Yiu, Wan, Ng, Chen and Su (2014) further explain that entrepreneurs who experienced distressing circumstances, (e.g., unemployment and rural poverty), are closely connected with vulnerable groups. Thereby, they are more likely to identify social issues and understand social needs as well as have more sympathy toward the needy, thus, driving them to participate in more social entrepreneurship. Following this logic, necessity entrepreneurs often prevail in impoverished settings where there are numerous unmet social and environmental needs (Dencker et al., 2019; Shepherd et al., 2020). Thus, they may understand better the social and environmental issues which arise from such environments. Accordingly, necessity entrepreneurs may engage in socio-environmental entrepreneurship to fulfil needs for themselves, their family and their community.

Third, as being forced to engage in entrepreneurship, necessity entrepreneurs often are in a less favourable position than other entrepreneurs (Block and Sandner, 2009). Consequently, it is less likely that necessity entrepreneurs will look for entrepreneurial activities with highly competitive intensity. Compared to economically oriented ones, socio-environmentally oriented entrepreneurial activities still hold numerous gaps in markets where "the large competitors neglect these niches either because they do not recognize them, because they do not consider them to be attractive enough or because they are not able to fulfil these specific customer preferences well enough" (Schaltegger and Wagner, 2011, p.229). Thus, the pursuit of socio-environmental goals may encounter lower competition, thereby, benefits for necessity entrepreneurs. Thus, it should not be a surprise that necessity entrepreneurs, compared to opportunity ones, are more inclined to pursue socio-environmental goals. Taken together, we argue that:

Hypothesis 1: The propensity of the pursuit of socio-environmental goals of necessity entrepreneurs is stronger than that of opportunity entrepreneurs.

2.2.4 National cultural contexts as the moderators of the relationship between opportunity-necessity entrepreneurship and the pursuit of socio-environmental goals

National culture can be differentiated by two manifestations: cultural values and cultural descriptive norms, also termed cultural practices (House et al., 2004, p.16). While cultural values represent shared aspirations or ideals of how people in the society should behave, cultural descriptive norms represent descriptive norms of typical behaviors of most people actually are enacted (Stephan and Pathak, 2016; Stephan and Uhlaner, 2010). Cultural values and descriptive norms affect entrepreneurial activities through different mechanisms. As values are seen to be a type of character trait, cultural values reflect the aggregate of personally important goals that a country's people hold (Schwartz, 2006). How cultural values influence entrepreneurship is commonly described as the "aggregate traits approach" (Davidsson, 1995; Davidsson and Wiklund, 1997). According to the aggregate trait perspective, the more people in a country who hold values consistent with entrepreneurship, the more the number of people will be motivated to engage in entrepreneurial activities, and thus the larger the aggregate supply of potential entrepreneurs will be (Davidsson and Wiklund, 1997; Uhlaner and Thurik, 2007). In contrast, cultural descriptive norms tacitly influence individuals' behavior within a culture (Fischer, 2006). Cultural descriptive norms offer individuals perceived patterns of common behaviours, institutional practices, proscriptions and prescriptions in a certain society (House et al., 2004). Individuals are likely to conform (more or less consciously) to these cultural descriptive norms by repeating typical behaviours which are common in their own society (Fischer, 2006). Accordingly, researchers are suggested considering both cultural values and descriptive norms in comparative entrepreneurship research to advance a better understanding of the various mechanisms of cultural determinants of entrepreneurial activities. Yet, empirical studies integrating both are still rare (Stephan and Pathak, 2016), especially there is only one study in social and environmental entrepreneurship (Stephan et al., 2015). Thus, in an attempt to bridge this gap, this study explores how cultural values and descriptive norms influence differentiation between opportunity and necessity entrepreneurs in engaging in socio-environmentally oriented entrepreneurial activities.

2.2.4.1 Postmaterialism cultural values (PM)

Postmaterialism cultural values (or postmaterialism) refers to the degree to which a society favours immaterial life goals over materialistic ones (Inglehart, 1997). Priorities in postmaterialism societies shift from an emphasis on economic and physical security toward an increased emphasis on non-material goals such as self-expression, subjective well-being, and quality-of-life concerns (Inglehart, 1997). Through applying for Inglehart's work on post-materialism as the cultural values (Inglehart, 1997; Inglehart, 2008; Inglehart and Baker, 2000), researchers find consistent results on the positive effect on social and environmental entrepreneurship (Hechavarría, 2016a; Hechavarría, 2016b; Hechavarría et al, 2017; Hoogendoorn, 2016; Stephan et al., 2015) and negative effect on commercial entrepreneurship (Morales and Holtschlag, 2013; Uhlaner and Thurik, 2007). We suggest that postmaterialism cultural values may moderate the difference between opportunity and necessity entrepreneurs in pursuing socio-environmental goals.

In line with past research (Hechavarría et al., 2017; Hechavarría, 2016a; Hechavarría, 2016b; Hoogendoorn, 2016; Morales and Holtschlag, 2013; Stephan et al., 2015; Uhlaner and Thurik, 2007), we expect that post-materialist cultural values will encourage entrepreneurs to pursue the socio-environmental goals rather than economical ones. That is because that postmaterialism societies give higher priorities to social and environmental benefits instead of financial ones (Inglehart, 1997). In such societies, entrepreneurial activities that correspond with such cultural values might be held in high esteem by entrepreneurs.

Yet, post-materialist cultural values will have a dissimilar impact on the pursuit of socio-environmental goals among opportunity versus necessity entrepreneurs. As our above argumentation, we argue that compared to their opportunity counterparts, necessity entrepreneurs are more likely to pursue socio-environmentally oriented entrepreneurship. Accordingly, we posit that necessity entrepreneurs are less affected by postmaterialism values to pursue socio-environmental goals than opportunity entrepreneurs. As socio-environmental entrepreneurship aligns with cultural values of postmaterialism, societies may give cues to favour socio-environmentally oriented activities and those who pursuing socio-environmental goals. The outcome is that supportive and subsidiary activities for

socio-environmental entrepreneurship will become available in these societies such as coaching and training courses, mentoring groups, consultation, networking. In such context, opportunity entrepreneurs may perceive a higher value of socio-environmentally oriented entrepreneurial opportunities due to social cues in favours of socio-environmental entrepreneurship. Also, taking advantage of available supports in postmaterialism societies will increase their inclination toward socio-environmental entrepreneurship.

The same cannot be said for necessity entrepreneurs. Where levels of non-materialistic values are high, such as postmaterialism societies, the quality of life, volunteering activities and environmental protection will be promoted, thereby, social and environmental problems may become fewer. Meanwhile, the number of socio-environmental ventures possibly increases because individuals in postmaterialism societies are more attracted to socio-environmental entrepreneurship. Given our earlier argument that necessity entrepreneurs favour operating in a less competitive environment, these will limit their ability to engage in socio-environmentally oriented entrepreneurial activities of necessity entrepreneurs. This is because necessity entrepreneurs, compared to opportunity ones, are constrained in their access to resources. Thus, they may perceive that it will be difficult for them to pursue socio-environmental goals which are highly attractive and competitive entrepreneurial activities in postmaterialism. As such, we argue that in nations with high levels of postmaterialism values, the difference between necessity and opportunity entrepreneurs in pursuing socio-environmental goals will be narrow. While opportunity entrepreneurs perceive the advantage of socio-environmentally oriented entrepreneurial opportunities, due to their disadvantaged situation, necessity entrepreneurs lack the ability to enter this now increasingly competitive space. Thus, we propose that:

Hypothesis 2: Postmaterialism attenuates the relationship between necessity-opportunity entrepreneurship and the pursuit of socio-environmental goals, that is, the difference between the opportunity and necessity entrepreneurs in pursuing socio-environmental goals is more pronounced in countries with lower levels of postmaterialism cultural values, and weaker in countries with higher levels of postmaterialism cultural values.

2.2.4.2 Cultural descriptive norms

GLOBE (Global Leadership and Organizational Behavior Effectiveness), up to date, is the only validated measure of cultural descriptive norms for various countries (House et al., 2004). It measures nine cultural factors: performance orientation, assertiveness, future orientation, humane orientation, institutional collectivism, in-group collectivism, power distance, gender egalitarianism, and uncertainty avoidance. (House et al., 2004). Yet, when nine cultural practice dimensions are used jointly, multicollinearity occurs due to the high correlation among them. Hence, it is more beneficial to consider two higher-order dimensions of cultural practices that are derived from a second-order factor analysis conducted by Stephan and Uhlaner (2010): socially supportive culture and performance-based culture. Notwithstanding only a few studies employed cultural descriptive norms (Autio et al., 2013; Hopp and Stephan, 2012; Laskovaia et al., 2017; Lee et al., 2020; Stephan and Uhlaner, 2010; Stephan et al., 2015; Thai and Turkina, 2014; Wennberg et al., 2013), they provide relatively consistent findings, for instance, on the positive impact of socially supportive culture on entrepreneurship (Autio et al., 2013; Stephan and Uhlaner, 2010).

2.2.4.2.1 Socially supportive culture (SSC)

Socially supportive culture (SSC), which features high orientation and low assertiveness, refer to "a positive societal climate in which people support each other" (Stephan and Uhlaner, 2010, p.1351). SSC is seen as one of the forms of weak-tie social capital (Stephan and Uhlaner, 2010), which is frequently considered as one of the important social supports for entrepreneurial activities (Adler and Kwon, 2002; Gedajlovic et al., 2013). SSC may create a positive societal climate in which citizens tend to provide social support to each other (Stephan and Uhlaner, 2010).

The previous research provides evidence on the positive impact of SSC - weak tie social capital (Stephan et al., 2015) as well as societal interpersonal trust - another form of social capital (Pathak and Muralidharan, 2016) on social entrepreneurship. In line with this, arguably, socio-environmentally oriented entrepreneurial activities might be considered as a legitimate behavior in the SSC context. This is because the pursuit of socio-environmental goals provides positive signals about the concerns with

the surrounding world rather than self-interest among members in the society, which is congruent with the societal norms of the SSC context. Thereby, entrepreneurs who conform to these norms will be seen as legitimate by crucial stakeholders (e.g, customers, suppliers, distributors, community, government and other organizations) and thus they will find it easier to access important resources (both tangible and intangible resources). We posit that necessity entrepreneurs are less affected by SSC to pursue socio-environmental goals than opportunity entrepreneurs.

Opportunity entrepreneurs may recognize that those who pursue socio-environmental goals will get more benefits from rich social capital in the SSC context since socio-environmentally oriented entrepreneurial activities are considered to resonate with the norms in this context. Accordingly, opportunity entrepreneurs may value entrepreneurial opportunities related to socio-environmental entrepreneurship, thereby, they have a higher propensity to pursue socio-environmental goals. As a result, opportunity entrepreneurs are more driven to help others through engaging in socio-environmental entrepreneurship which resonates with societal norms of SSC so that they might benefit from rich social capital in the SSC context.

In contrast, the ability to engage in socio-environmentally oriented entrepreneurial activities of necessity entrepreneurs may be limit in the SSC context due to their disadvantaged situation. Under the stimulative effects of social support in the SSC context, the number of organizations endorsing socio-environmental goals increases, generating a higher competition in socio-environmentally oriented entrepreneurship. Necessity entrepreneurs perceive them as a more disadvantaged status than opportunity ones due to their constrained access to resources. Such perception may depress the necessity entrepreneurs to engage in socio-environmentally oriented entrepreneurial activities that are increasingly competitive in SCC societies. Combining these arguments, we propose:

Hypothesis 3: Socially supportive culture attenuates the relationship between necessity-opportunity entrepreneurship and the pursuit of socio-environmental goals, that is, the difference between the opportunity and necessity entrepreneurs in pursuing socio-environmental goals is more pronounced in

countries with lower levels of socially supportive cultural norms, and weaker in countries with higher levels of socially supportive cultural norms.

2.2.4.2.2 Performance-based culture (PBC)

Performance-based culture (PBC) combines uncertainty avoidance with high future and performance orientation alongside low power distance and low in-group collectivism practices. PBC describes "a culture that rewards individual accomplishments (vs collective membership, family relationships or position) and in which systematic, future-oriented planning is viewed as a key way to achieve high performance" (Stephan and Uhlaner, 2010, p. 1351). PBC reflects "the extent to which a community encourages and rewards innovation, high standards and performance improvement" (Javidan 2004, p.239). As such, high-PBC societies encourage planning, a long-term strategic orientation, deferring gratification and reward initiative-taking and innovation (House et al., 2004) through providing an efficient institutional framework and the availability of entrepreneurial opportunities (Stephan and Uhlaner, 2010; Thai and Turkina, 2014).

We posit that socio-environmentally entrepreneurship might be considered as a legitimate behavior in the context emphasising PBC. That is because social and environmental problems are commonly considered as grand challenges (Ferraro et al., 2015) and pursuing socio-environmental goals carries many risks and requires time and effort (Renko, 2013) while it could just reap results over the longer term. People pursuing socio-environmental goals will be considered as those who are hard-working, determined, and confident about their entrepreneurial abilities in resolving social and environmental challenges. Such entrepreneurs are aligned with the cultural norm in PBC societies, thereby, they will be legitimate in the eyes of important stakeholders and improve their access to resources.

Although PBC norms may also influence the tendency toward socio-environmental entrepreneurship of opportunity entrepreneurs, they will be more salient to necessity entrepreneurs. As entrepreneurs out of necessity are often in a less favourable position than opportunity ones (Block and Sandner, 2009), necessity entrepreneurs entirely rely on the environment to get resources.

Consequently, necessity entrepreneurs, compared to opportunity ones, are less likely to run counter to entrepreneurial activities that resonate with certain societal norms. In other words, necessity entrepreneurs are more likely than opportunity entrepreneurs to adapt their entrepreneurial goals to socio-cultural norms. As such, necessity entrepreneurs may accept the challenges involved in the pursuit of socio-environmental goals to demonstrate a hard-working attitude combined with a "can-do" attitude (Javidan, 2004) and then achieve societal legitimacy in the PBC context. In this case, the pursuit of socio-environmental entrepreneurship will not only be perceived as means to fulfil socio-environmental needs for necessity entrepreneurs, their family and community but also a means to gain societal legitimacy in PBC societies, enabling them to acquire resources. Thus, we expect that PBC norms will stimulate the pursuit of socio-environmental goals by necessity entrepreneurs more strongly than that by opportunity entrepreneurs. Accordingly, in PBC societies, the gap between opportunity and necessity entrepreneurs in the pursuit of socio-environmental entrepreneurship widen. With these in mind, we propose that:

Hypothesis 4: Performance-based culture amplifies the relationship between opportunity-necessity entrepreneurship and the pursuit of socio-environmental goals, that is, the difference between the opportunity and necessity entrepreneurs in pursuing socio-environmental goals is weaker in countries with lower levels of performance-based cultural norms, and stronger in countries with higher levels of performance-based cultural norms.

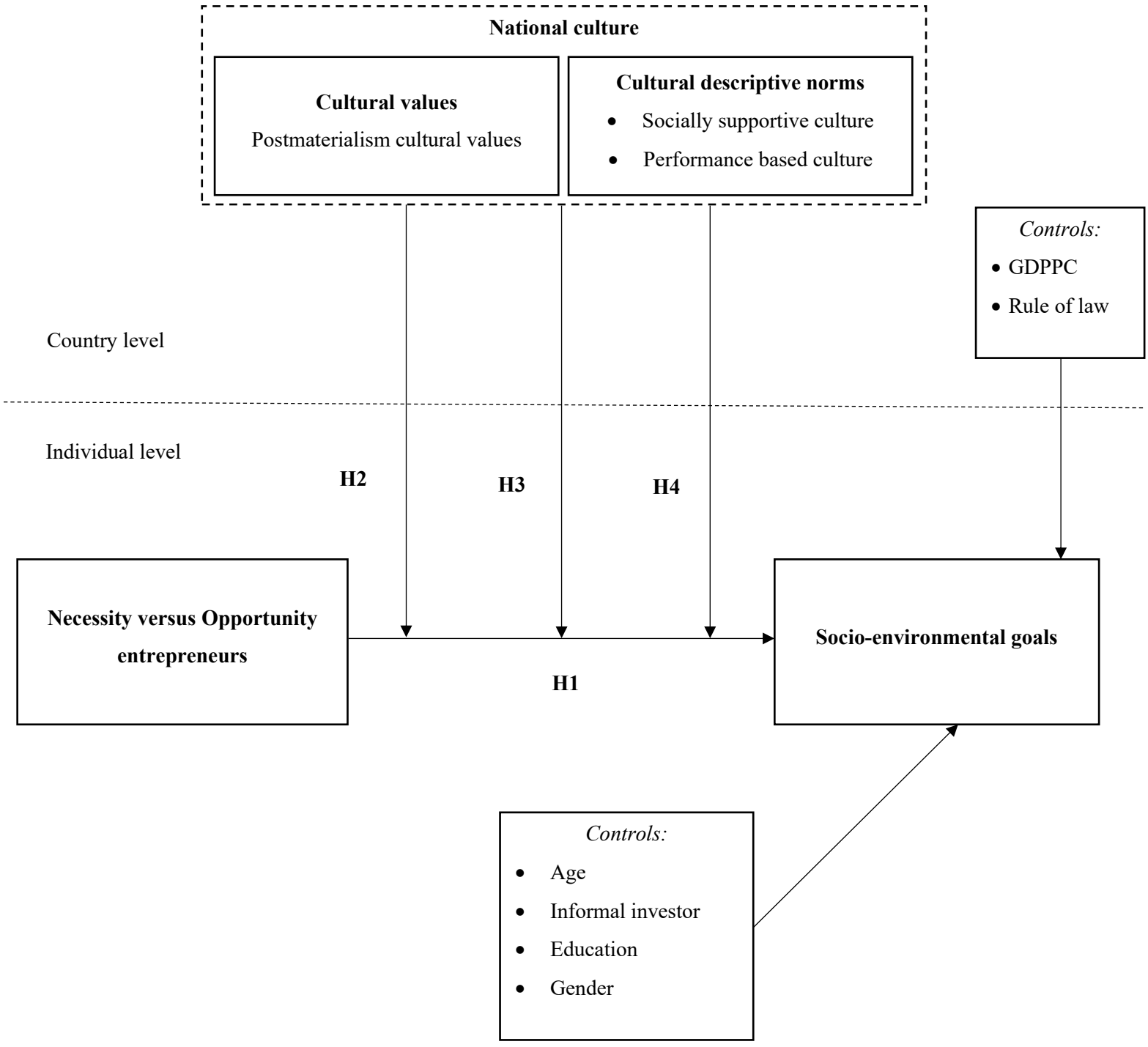


Figure 2.1 Research model of chapter 2

2.3 Methodology

2.3.1 Sample and data

Global Entrepreneurship Monitor (GEM) provides a leading dataset for comparative research on entrepreneurship (Reynolds et al., 2005). Therefore, the main data source for our analysis is derived from "Global Entrepreneurship Monitor's Adult Population Survey" (GEM APS) data of 2009 with over 150,000 individuals in over 50 countries (see Lepoutre et al., 2013 for the detailed description). We restrict our sample to young entrepreneurs: those who own a new business that has run for less than 42 months. We also incorporate data from various sources: World Values Survey (WVS), GLOBE, Polity IV Indicator and World Bank. The final dataset for our main analyses comprises information on 3,145 young entrepreneurs embedded in 26 national contexts.

2.3.2 Dependent variable

We use the score of points allocated for the extent to an entrepreneur's willingness to pursue socio-environmental goals as our dependent variable. It is collected from the following questions: *"Organizations may have goals according to the ability to generate economic value, societal value, and environmental value. Please allocate a total of 100 points across these three categories as it pertains to your [venture's] goals.*

How many points for economic value?

And how many points for societal value?

And, finally, how many points for environmental value?"

According to an entrepreneur's responses to economic value, we compute continuous measure for the extent to an entrepreneur's willingness to pursue socio-environmental goals by using the point allocated for societal value and environmental value, which is equivalent to 100 - the point allocated for economic value. As such:

The extent to an entrepreneur's willingness to pursue socio-environmental goals = 100 - economic value

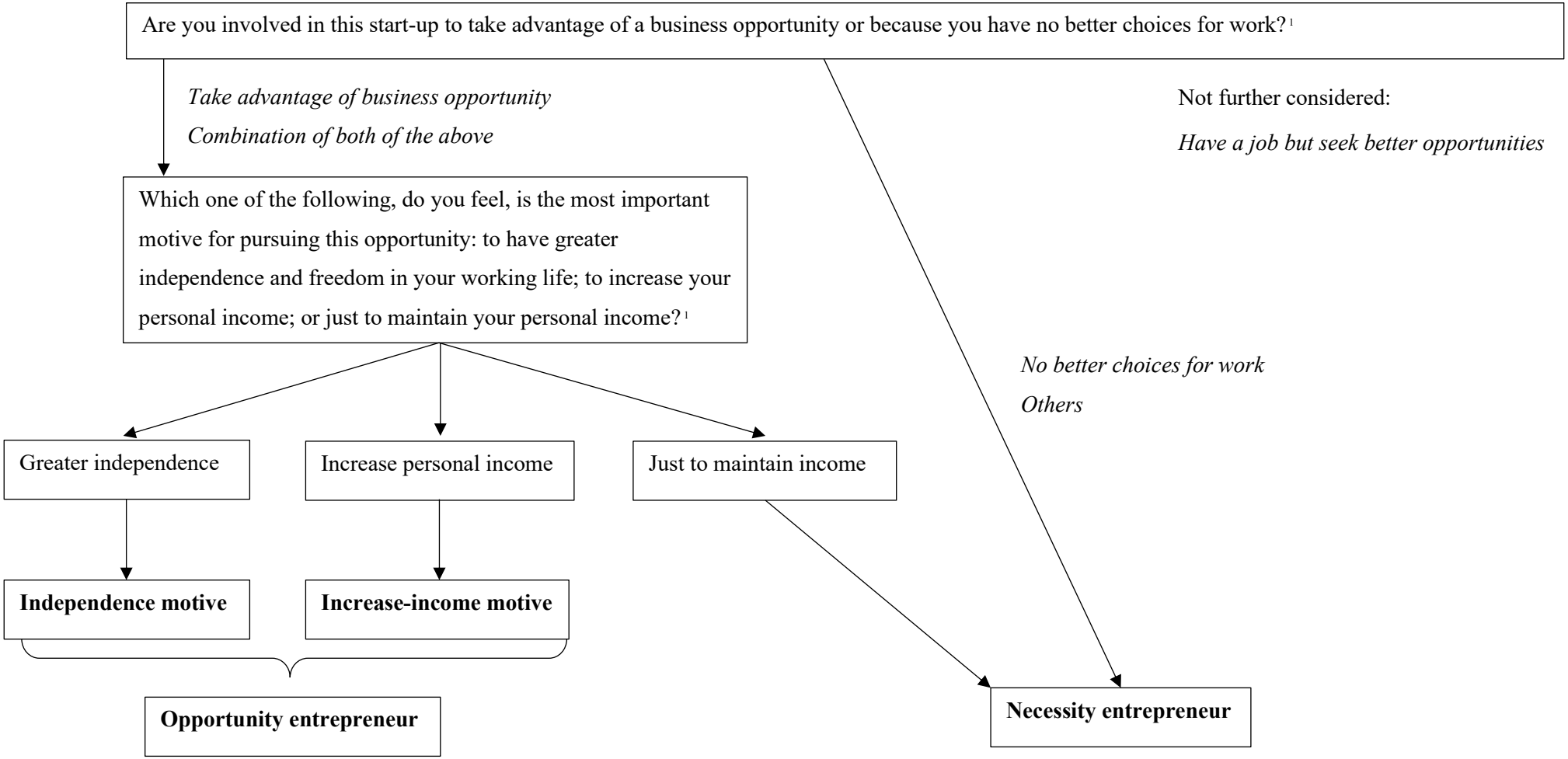
For example, the respondent may allocate 20 points for economic value, 30 points for societal value and 50 points for environmental value. This means that her/his extent to a willingness to pursue socio-environmental goals is 80.

2.3.3 Individual–level (level 1) predictor

The distinction of entrepreneurial motivation is measured through two questions of the GEM survey. Figure 2.2 provides a detailed flow chart of these survey questions. The first question is *"Are you involved in this start-up to take advantage of a business opportunity or because you have no better choices for work?"* The participants could choose the answer: *"Take advantage of business opportunity", "No better choices for work", "Combination of both of the above", "Have a job but seek better opportunities"* or *"Others"*.

GEM also includes a follow-up question for only those who answer *"Take advantage of business opportunity"* and *"Combination of both of the above"* in the previous question. The second question is *"Which one of the following, do you feel, is the most important motive for pursuing this opportunity: to have greater independence and freedom in your working life; to increase your personal income; or just to maintain your personal income?"* The categories of the response are: *"Greater independence", "Increase personal income"* or *"Just to maintain income"*.

According to GEM, this second question aims to differentiate the motive for pursuing the entrepreneurial opportunity. This implies that those who answer *"No better choices for work", "Have a job but seek better opportunities", "Others"* in the first question, who do not answer the second question, will not be classified as opportunity entrepreneurs. However, those who answer *"Have a job but seek better opportunities"* cannot be classified as necessity entrepreneurs. As such, in this approach, we do not account for *"Have a job but seek better opportunities"* category in the first question.



[1]None of these, Don't know and Refused are treated as missing values.

Figure 2.2 Questions for opportunity versus necessity entrepreneurs from the GEM

Based on these two questions, we generate **the first primary indicator** to measure entrepreneurial motivation differentiation, which is measured with two categories. ***Necessity entrepreneur (coded = 1)*** is identified by those who meet one in two the following criteria: (a) they are pushed into entrepreneurship due to no better choice for work (those who answer that *"No better choices for work"* or *"Others"* in the first question); or (b) they only seek to maintain their income (those who answer that "Just to maintain income" in the second question).

Opportunity entrepreneur (coded = 0) is identified by those who meet one in two the following criteria: (c) they are pulled to entrepreneurship by opportunity (those who answer that *"Take advantage of business opportunity"* or *"Combination of both of the above"* in the first question) to have independence (those who answer that "To have greater independence" in the second question); or (d) they are pulled to entrepreneurship by opportunity (those who answer that *"Take advantage of business opportunity"* or *"Combination of both of the above"* in the first question) to increase their income (those who answer that "To increase personal income" in the second question).

Additionally, we also dig deeper into motive differentiation among opportunity entrepreneurs: independence motive indicates participation in entrepreneurship because they desire independence while the increase-income motive indicates their main motive for being an entrepreneur is to increase their income. Accordingly, for additional analysis, we generate **the second primary indicator** of entrepreneurial motivation, which is a nominal variable with 3 categories.

Necessity entrepreneur (coded = 1, reference/base category) is identified by those who meet one in two the following criteria: (a) they are pushed into entrepreneurship due to no better choice for work (those who answer that *"No better choices for work"* or *"Others"* in the first question); or (b) they only seek to maintain their income (those who answer that *"Just to maintain income"* in the second question).

Independence motived entrepreneur (coded = 2) is identified by those who meet both following criteria: (e) they are pulled to entrepreneurship by opportunity (those who answer that *"Take advantage of business opportunity"* or *"Combination of both of the above"* in the first question) and (f)

they desire independence (those who answer that *"To have greater independence"* in the second question)

Increase-income motived entrepreneur (coded = 3) is identified by those who meet both following criteria: (g) they are pulled to entrepreneurship by opportunity (those who answer that *"Take advantage of business opportunity"* or *"Combination of both of the above"* in the first question) and (h) they desire to increase their wealth (those who answer that *"To increase personal income"* in the second question).

For regressions, STATA command will automatically create dummies (indicator) variables for each observed value of the categorical variable. By default, the smallest value normally will be used as a reference/base category. However, for the purpose of analysis, when running the regressions (in STATA) with a categorical variable, we chose necessity entrepreneur as the reference/base category, which is automatically omitted while the results of the other two categories are reported.

2.3.4 Country-level (level 2) predictors

2.3.4.1 Postmaterialism cultural values

Previous literature shows a consensus that postmaterialism cultural values have a negative effect on commercial entrepreneurship but a positive effect on social entrepreneurship (Morales and Holtschlag, 2013; Stephan et al., 2015; Uhlaner and Thurik, 2007). Post-materialism cultural values are measured through the 4-item version of the postmaterialism index (Inglehart, 1997), which stems from World Values Surveys (WVS, 2010). This study uses data computed by the average rate across the World Values Survey Wave 4 (1999 – 2004) and Wave 5 (2005 – 2009). A strong positive correlation between the two waves ($r = 0.86$, $p<0.001$) shows the stability of postmaterialism in both periods. The postmaterialism score presenting in Table 2.1 shows that the percentage of citizens in the sample of each country that is scored as postmaterialists.

2.3.4.2 Socially supportive culture

SSC is one of two second-order cultural factors developed by Stephan and Uhlaner (2010) from the cultural descriptive norms of GLOBE (House et al., 2004). SSC is a dimension (scale) that includes positive humane orientation and negative assertiveness. SSC can take on different values, ranging from higher to lower values. Higher values on SSC indicate a more supportive culture characterised by greater ease of contact, a positive interpersonal climate, and norms of cooperation.

2.3.4.3 Performance-based culture

PBC is one of two second-order cultural factors developed by Stephan and Uhlaner (2010) from the cultural descriptive norms of GLOBE (House et al., 2004). PBC is a dimension (scale) that includes uncertainty avoidance, high future and performance orientation alongside low in-group collectivism and low power distance. Higher values on PBC indicate that culture favours innovation, high standards, high performance and individual accomplishments.

2.3.5 Individual–level controls

2.3.5.1 Age

Age affects not only commercial (Reynolds and Curtin, 2009) but also social and environmental entrepreneurship (Brieger et al., 2020; Nga and Shamuganathan, 2010). Compared to commercial entrepreneurship, older aged individuals are more likely to engage in social entrepreneurship (Estrin et al., 2013; Parker, 2008). Hence, we control for individuals' age and age in a quadratic form to capture any curvilinear effects since age may have an inverted-U effect on socially and environmentally oriented entrepreneurship (Brieger et al., 2020; Estrin et al., 2013).

2.3.5.2 Informal investor in the past 3 years

The importance of the individual experience of being an informal investor for socially oriented entrepreneurial activities is emphasized in previous research (Meyskens et al., 2010). It is measured through an indicator from GEM is an informal investor in the past 3 years.

2.3.5.3 Education

Education is considered an important factor in shaping entrepreneurship (Yli-Renko et al., 2001; Honig, 2004; Peterman and Kennedy, 2003). Relative to commercial entrepreneurship, the more highly educated individuals are more likely to enter social entrepreneurship (Estrin et al., 2013). Thus, this study controls for the tertiary education level (1= respondent has a tertiary education; 0=otherwise).

2.3.5.4 Gender

Compared to commercial entrepreneurship, social and environmental entrepreneurship attracts more women (Estrin et al., 2013; Hörisch et al., 2017). Therefore, this study includes a dummy variable for gender (1=Female and 0=Male) as control variables.

2.3.6 Country-level controls

2.3.6.1 Economic development - GDPPC

Both commercial and social entrepreneurship are known to vary with a country's level of economic development (Brieger and De Clercq, 2019; Hechavarria et al., 2015; Wenneker et al., 2005). This study, therefore, uses 2008 GDPPC (gross domestic product per capita) at purchasing power parity USD obtained from the World Bank to control for the size of the economy. We also include GDPPC squared to allow any nonlinear relationship.

2.3.6.2 Rule of law

We also control for a rule of law (in 2008) from the Polity IV Indicator database of efficient constraints on the arbitrary power of the executive branch of the government “Executive constraints”, which is found to influence social entrepreneurship in previous research (Estrin et al., 2013).

2.3.7 Data analysis

We test our hypotheses by using a series of multilevel linear regression models as our data contains individual-level observations grouped by country resulting in a hierarchical and clustered dataset. As we combine individual-level observations with country-level measures of cultural values and descriptive norms, applying multilevel analysis could allow us to avoid biases arising in single-level regressions. Specifically, whereas individual-level regressions increase the risk of Type 1 errors and biased standard errors as well as disregard the nature of culture as a collective concept, country-level regressions carry the risk of aggregation bias and ignore the nature of entrepreneurial activities as an individual behaviour (Hox, Moerbeek and Van der Schoot, 2017; Peterson, Arregle and Martin, 2012).

Despite both centring and standardization have the same advantages: interpreting more easily, creating meaningful value for the intercept as well as reaching convergence faster; standardization is less preferred due to its effects in the interpretation of the regression slopes and the residual variances. Moreover, centring produces more realistic and stable variance estimates. (Hox, et al., 2017). Group-mean centring is commonly recommended in research encompassing cross-level interaction effects (Aguinis et al., 2013). Applying grand-mean centering may create less accurate results, or even a lack of meaningful interpretation for the cross-level interaction effect (Enders and Tofighi, 2007) whereas group-mean centering leads to the most accurate estimates of within-group slopes and minimizes the possibility of finding spurious cross-level interaction effects (Hofmann and Gavin, 1998). Therefore, to appropriately test and interpret multilevel estimates as well as to alleviate potential level-2 estimation problems due to multicollinearity (Hofmann and Gavin, 1998), in our paper, except to binary variables, we center the Level 1 predictors and controls at country means (i.e., group-mean centering), at the same time, center the Level 2 predictors and controls at sample means (i.e., grand-mean centering). We also use the variance inflation factor (VIF) to test for multicollinearity displayed in Table 2.5. Because VIF scores are below 5.0, this suggests that no multicollinearity is present among our country-level predictor variables (Hair et al., 1998).

The Intraclass Correlation (ICC), the proportion of total variance contributed by country-level variance components as frequently used in cross-cultural research, estimated how much of the variance

in the dependent variables resided between countries (Hox et al., 2017). Significant between-group variance in the dependent variables requires multilevel analysis (Peterson et al., 2012). To see whether this applies in our study, we first estimate a multilevel regression as the null model without any predictors or control variables. The Intraclass Correlations (ICC) estimated based on the null model yielded that 16.43% of the variation in socio-environmental goals of young entrepreneurs across 26 countries. ICC value over 15% could be considered as a large proportion of the variance resided at the country level (Hox et al., 2017). In our case, there is sufficient evidence to apply multilevel analysis for the model.

To explain how individual motivation and cultural contexts affect an entrepreneur's decision in pursuing socio-environmental goals, we use multilevel random-effect modelling. More specifically, in our multilevel model, we allow only intercept to vary randomly across countries to account for the variance in the dependent variable. We do not allow the regression slopes associated with any of the independent variables to vary randomly. Throughout our study, random effects refer to random intercepts only and not random slopes.

To explore entrepreneurial motivation differentiation in pursuing socio-environmental goals, we first test the difference between opportunity and necessity entrepreneurs and then we go further with the distinction of two types of opportunity motives: independence and increase-income motives. To test the influence of both country–level and individual–level predictors as well as their interaction effects on socio-environmental goals among young entrepreneurs which are illustrated in Table 2.6 and 2.7, we proceed with a five-step estimation strategy.

First, we estimate between-group (country) variance in the dependent variable by including no predictors or controls in our multilevel (random–effect) linear regressions which are called the "null model". This step provides us with supports for the choice of multilevel techniques. Second, we add both individual–level (level 1) and country-level (level 2) controls in the model to estimate the proportion of variance explained by these controls alone (Model 1 of Tables 2.6 and 2.7). After adding individual-level predictors (Model 2 of Tables 2.6 and 2.7), we include three cultural predictors into the model but without the added interaction terms (Model 3 of Tables 2.6 and 2.7). These two steps enable

us to test the main effect, at the same time, to estimate the proportion of variance explained by the individual-level and country-level predictors in turn after accounting for all control variables. Finally, to test for interaction effects, we initially introduce each interaction term individually. Particularly, for main analysis in Table 2.6, PM*Necessity entrepreneurs (Model 4), SSC*Necessity entrepreneurs (Model 5) and PBC*Necessity entrepreneurs (Model 6). For additional analysis in Table 2.7, PM*Entrepreneurial motivation (1 = necessity entrepreneur, 2 = independence motivated entrepreneur, 3 = increase-income motivated entrepreneur) (Model 4), SSC*Entrepreneurial motivation (1 = necessity entrepreneur, 2 = independence motivated entrepreneur, 3 = increase-income motivated entrepreneur) (Model 5) and PBC*Entrepreneurial motivation (1 = necessity entrepreneur, 2 = independence motivated entrepreneur , 3 = increase-income motivated entrepreneur) (Model 6). Then we include three interaction terms together (Model 7 of Tables 2.6 and 2.7).

For each model, along with estimates for the fixed part (estimates of coefficients) and random part (variance estimates), we also report model fit statistics: (1) the change-in-deviance or likelihood ratio test (to test whether the model is a significant improvement over the previous model); (2) the change in Pseudo R^2 or the change in the proportion of country-level variance explained by a model relative to its preceding model (to examine the effect size for the predictors added at each step).

2.4 Results

Table 2.1 shows the average values of the main variables of interest in this study for each country in our sample. Table 2.2 provides the descriptive statistics for all variables (controls, predictors and the dependent variable) in this research. Table 2.3 and Table 2.4 display correlation matrices for the individual and country-level variables. Table 2.5 reports the Variance Inflation Factor (VIF) scores and Tolerance values on the country–level controls and predictors. Tables 2.6 and 2.7 shows the effects of cultural factors on the difference between opportunity and necessity entrepreneurs in the pursuit of socio-environmental goals.

Table 2.1 Country-level descriptive statistics

Country	Socio-environmental goals	Necessity entrepre-neur	Indepen-dence motivated entrepre-neur	Increase-income motivated entrepre-neur	Age	Informal investor	Tertiary	Female entrepre-neur	PM	SSC	PBC	GDPPC	Rule of law
Argentina	41	63%	17%	19%	39	7%	30%	45%	20	4	3	18437	6
Brazil	12	48%	27%	25%	35	2%	12%	55%	11	4	3	13803	6
China	39	58%	9%	33%	36	12%	20%	48%	4	4	4	7948	3
Colombia	36	51%	28%	21%	40	10%	35%	42%	19	4	3	10547	6
Denmark	49	16%	61%	24%	45	8%	39%	45%	16	4	5	45866	7
Finland	37	35%	46%	20%	39	13%	52%	46%	11	4	4	42575	7
France	44	18%	45%	36%	39	14%	68%	23%	18	4	4	37618	6
Germany	29	45%	45%	9%	40	12%	65%	31%	16	3	4	40989	7
Greece	40	42%	24%	34%	37	8%	53%	32%	17	3	3	31882	7
Guatemala	28	59%	17%	24%	36	11%	4%	56%	8	4	3	6782	6
Hungary	13	41%	41%	19%	42	20%	55%	30%	2	3	3	23734	7
Iran	32	48%	27%	25%	34	10%	31%	30%	10	4	3	17187	2
Israel	27	43%	22%	35%	36	15%	63%	35%	13	4	4	29082	7
Italy	51	35%	37%	28%	38	7%	23%	16%	24	4	3	37954	7
Korea	38	69%	14%	17%	40	13%	54%	14%	4	4	3	28588	6
Malaysia	44	31%	28%	41%	40	0%	36%	31%	7	4	4	20687	5
Morocco	42	35%	35%	31%	34	2%	5%	30%	7	4	3	6107	3
Netherlands	47	27%	65%	8%	42	3%	8%	47%	20	4	4	47134	7
Russia	11	37%	23%	40%	40	10%	93%	53%	2	4	3	24006	4
Slovenia	53	12%	62%	26%	37	14%	40%	20%	16	4	3	31138	7
South Africa	52	38%	36%	26%	36	21%	20%	41%	8	4	4	11990	7
Spain	38	42%	35%	23%	39	12%	51%	40%	15	3	3	34164	7
Switzerland	33	24%	72%	4%	44	9%	43%	46%	24	4	4	56756	7
UK	42	35%	49%	16%	44	5%	55%	38%	24	4	4	37903	7
USA	34	36%	35%	29%	46	16%	76%	38%	22	4	4	50384	7
Venezuela	36	41%	35%	24%	36	0%	24%	64%	14	4	3	17897	4

Entrepreneurial motivation: 1 = necessity entrepreneur (reference category), 2 = independence motivated entrepreneur, 3 = increase-income motivated entrepreneur
Necessity entrepreneur (%) is the percentage of Necessity entrepreneurs per country
Independence motivated entrepreneur (%) is the percentage of Independence motivated entrepreneurs per country
Increase-income motivated entrepreneur (%) is the percentage of Increase-income motivated entrepreneurs per country
Age represents the average age of respondents per country
Informal investor (%) is the percentage of respondents who are Informal investors in the last 3 years per country
Female entrepreneur (%) is the percentage of Female entrepreneurs per country
Tertiary education (%) is the percentage of respondents who have tertiary education per country

Table 2.2 Descriptive statistics

Level 1 variables	Mean	SD	Min	Max
Socio-environmental goals	36.132	25.632	0	100
Necessity entrepreneur[a]	0.436	0.496	0	1
Independence motivated entrepreneur[a]	0.332	0.471	0	1
Increase-income motivated entrepreneur[a]	0.231	0.422	0	1
Age	38.984	11.332	18	79
Informal investor in last 3 years	0.093	0.29	0	1
Tertiary education	0.382	0.486	0	1
Female entrepreneurs	0.406	0.491	0	1

[a] Entrepreneurial motivation: 1 = necessity entrepreneur (reference category), 2 = independence motivated entrepreneur, 3 = increase-income motivated entrepreneur

N = 3,145 individuals

Level 2 variables	Mean	SD	Min	Max
Postmaterialism values	13.419	6.869	1.8	24.3
Socially supportive culture	3.848	0.285	3.325	4.495
Performance–based culture	3.557	0.476	2.848	4.508
GDPPC	28121.48	14477.92	6106.845	56755.84
Rule of law	5.962	1.509	2	7

n = 26 countries

Table 2.3 Individual-level correlations

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) Age	1							
(2) Informal investor in last 3 years	-0.014	1						
(3) Tertiary education	0.063***	0.058**	1					
(4) Female entrepreneurs	-0.017	-0.038*	-0.048**	1				
(5) Necessity entrepreneur[a]	0.041*	-0.029	-0.149***	0.048**	1			
(6) Independence motivated entrepreneur[a]	0.006	-0.025	0.126***	-0.02	-0.621***	1		
(7) Increase-income motivated entrepreneur[a]	-0.055**	0.062***	0.034+	-0.035+	-0.483***	-0.387***	1	
(8) Socio-environmental goals	0.028	0.051**	0.051**	0.008	0.005	0.034+	-0.043*	1

[a] Entrepreneurial motivation: 1 = necessity entrepreneur (reference category), 2 = independence motivated entrepreneur, 3 = increase-income motivated entrepreneur

N = 3,145 individuals

*** *p<0.001*, ** *p<0.01*, * *p<0.05*, + *p<0.1*

Table 2.4 Country-level correlations

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Postmaterialism values	1								
(2) Socially supportive culture	-0.275	1							
(3) Performance–based culture	0.405*	0.144	1						
(4) GDPPC	0.623***	-0.267	0.642***	1					
(5) Rule of law	0.499**	-0.468*	0.428*	0.612***	1				
(6) Necessity entrepreneur[a]	-0.351+	-0.082	-0.456*	-0.552**	-0.292	1			
(7) Independence motivated entrepreneur[a]	0.531**	-0.171	0.626***	0.704***	0.472*	-0.823***	1		
(8) Increase-income motivated entrepreneur[a]	-0.402*	0.424*	-0.409*	-0.401*	-0.387+	-0.069	-0.510**	1	
(9) Socio-environmental goals[b]	0.415*	0.209	0.329	0.189	0.169	-0.360+	0.321	-0.018	1

[a] Entrepreneurial motivation (based on 3,145 observations): 1 = necessity entrepreneur (reference category), 2 = independence motivated entrepreneur, 3 = increase-income motivated entrepreneur

[b]Socio-environmental goals among young entrepreneurs based on 3,145 observations

n = 26 countries

*** *p<0.001*, ** *p<0.01*, * *p<0.05*, + *p<0.1*

Table 2.5 Multicollinearity test

	VIF[a]	Tolerance[b]
Independence motivated entrepreneur[c]	1.261	0.793
Increase-income motivated entrepreneur[c]	1.202	0.832
Age	1.125	0.889
Age squared	1.108	0.902
Informal investor in last 3 years	1.018	0.982
Tertiary education	1.146	0.872
Female entrepreneurs	1.016	0.985
GDPPC	4.131	0.242
GDPPC squared	1.607	0.622
Rule of law	3.61	0.277
Postmaterialism values	2.195	0.456
Socially supportive culture	2.897	0.345
Performance–based culture	2.576	0.388
Mean VIF	1.915	

[a]VIF (Variance Inflation Factors) values greater than 5 signal high collinearity and values greater than 10 indicates reasons for concern due to collinearity among variables. Our variables do not suffer from collinearity.

[b]Tolerance values less than 0.1 indicate collinearity among variables. Our variables do not suffer from collinearity.

[c]Entrepreneurial motivation: 1 = necessity entrepreneur (reference category), 2 = independence motivated entrepreneur, 3 = increase-income motivated entrepreneur

N = 3,145 Individuals

Table 2.6 Effects on the pursuit of socio-environmental goals

	Controls		Individual-level predictor		Main effects		Cross-level interactions							
							PM*NE		SSC* NE		PBC* NE		All interactions	
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7	
	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE
Fixed effects														
Constant	32.95***	(3.36)	32.03***	(3.41)	34.89***	(3.19)	34.91***	(3.20)	34.94***	(3.19)	34.90***	(3.19)	34.94***	(3.18)
Individual-level predictor														
Necessity entrepreneurs (NE)[a]			1.94*	(0.89)	1.95*	(0.89)	1.91*	(0.89)	1.63+	(0.90)	1.99*	(0.89)	1.69+	(0.91)
Individual-level controls														
Age	0.02	(0.04)	0.01	(0.04)	0.01	(0.04)	0.01	(0.04)	0.01	(0.04)	0.01	(0.04)	0.01	(0.04)
Age squared	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)
Informal investor	4.29**	(1.49)	4.39**	(1.49)	4.46**	(1.49)	4.45**	(1.49)	4.35**	(1.49)	4.45**	(1.49)	4.32**	(1.49)
Tertiary education	2.67**	(0.96)	2.94**	(0.97)	2.97**	(0.97)	2.97**	(0.97)	2.99**	(0.97)	2.96**	(0.97)	2.97**	(0.97)
Female entrepreneurs	1.93*	(0.88)	1.86*	(0.88)	1.81*	(0.88)	1.81*	(0.88)	1.84*	(0.88)	1.81*	(0.88)	1.85*	(0.88)
Country-level predictors														
Postmaterialism values (PM)					0.95*	(0.37)	0.91*	(0.37)	0.95**	(0.37)	0.95*	(0.37)	1.00**	(0.38)
Socially supportive culture (SSC)					13.42	(8.74)	13.37	(8.75)	15.64+	(8.80)	13.49	(8.74)	16.23+	(8.81)
Performance-based culture (PBC)					6.83	(6.77)	6.85	(6.78)	6.81	(6.76)	6.37	(6.83)	5.93	(6.82)
Country-level controls														
GDPPC	0.00	(0.00)	0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)
GDPPC squared	0.00	(0.00)	0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)
Rule of law	0.58	(1.89)	0.57	(1.90)	0.46	(1.87)	0.45	(1.87)	0.39	(1.87)	0.47	(1.87)	0.41	(1.86)
Cross-level interactions														
PM x NE							0.09	(0.13)					-0.09	(0.16)
SSC x NE									-6.40*	(3.11)			-7.54*	(3.58)
PBC x NE											1.19	(2.32)	2.25	(2.62)
Variance components														
Country-level variance	115.5		117.4		80.07		80.34		79.90		80		79.47	
Individual-level variance	567.8		566.8		566.8		566.7		566		566.7		565.9	
% ICC	16.90		17.16		12.38		12.42		12.37		12.37		12.31	

Model fit							
Degree of freedom	8	9	12	13	13	13	15
Country-level Pseudo R2 from M0[b]	-2.67	-4.36					
Individual-level Pseudo R2 from M0	0.73	0.91					
LR test (from M0)	22.28 (8)	26.99 (9)					
Prob > Chi2	0.00	0.00					
Country-level Pseudo R2 from M1 [b]		-1.65					
Individual-level Pseudo R2 from M1		0.18					
LR test (from M1)		4.72 (1)					
Prob > Chi2		0.03					
Country-level Pseudo R2 from M2 [b]			31.80				
Individual-level Pseudo R2 from M2			0.00				
LR test (from M2)			9.59 (3)				
Prob > Chi2			0.02				
Country-level Pseudo R2 from M3 [b]				-0.34	0.21	0.09	0.75
Individual-level Pseudo R2 from M3				0.02	0.14	0.02	0.16
LR test (from M3)				0.50 (1)	4.23 (1)	0.26 (1)	5.00 (3)
Prob > Chi2				0.48	0.04	0.61	0.17
AIC	28967	28965	28961	28963	28959	28963	28962
Deviance	-14473	-14470	-14466	-14465	-14463	-14465	-14463

[a] 1 = Necessity entrepreneurs, 0 =Opportunity entrepreneurs

[b] M0 = Null model, M1 = Model 1, M2 = Model 2, M3 = Model 3

N = 3,145 at individual–level, *n* = 26 countries; *** *p<0.001,* ** *p<0.01,* * *p<0.05,* + *p<0.1*

Table 2.7 Effects on the pursuit of socio-environmental goals (additional analysis)

	Controls		Individual-level predictor		Main effects		Cross-level interactions							
							PM*Motivation		SSC* Motivation		PBC* Motivation		All interactions	
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7	
	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE
Fixed effects														
Constant	32.95***	(3.36)	33.99***	(3.41)	36.82***	(3.20)	36.83***	(3.21)	36.50***	(3.19)	36.99***	(3.20)	36.63***	(3.20)
Individual-level predictor														
Entrepreneurial motivation[a]														
Independence			-0.83	(1.03)	-0.84	(1.03)	-0.79	(1.07)	-0.24	(1.09)	-0.95	(1.03)	-0.33	(1.11)
Increase-income			-3.33**	(1.11)	-3.35**	(1.11)	-3.47**	(1.12)	-3.23**	(1.11)	-3.78***	(1.14)	-3.70**	(1.14)
Individual-level controls														
Age	0.02	(0.04)	0.01	(0.04)	0.02	(0.04)	0.01	(0.04)	0.01	(0.04)	0.01	(0.04)	0.01	(0.04)
Age squared	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)
Informal investor	4.29**	(1.49)	4.53**	(1.49)	4.60**	(1.49)	4.62**	(1.49)	4.50**	(1.49)	4.66**	(1.49)	4.56**	(1.49)
Tertiary education	2.67**	(0.96)	2.93**	(0.97)	2.96**	(0.97)	2.97**	(0.97)	2.98**	(0.97)	2.94**	(0.97)	2.95**	(0.97)
Female entrepreneurs	1.93*	(0.88)	1.82*	(0.88)	1.77*	(0.88)	1.75*	(0.88)	1.80*	(0.88)	1.71+	(0.88)	1.76*	(0.88)
Country-level predictors														
Postmaterialism values (PM)					0.94*	(0.37)	1.02**	(0.38)	0.95**	(0.37)	0.95*	(0.37)	0.93*	(0.38)
Socially supportive culture (SSC)					13.73	(8.72)	13.67	(8.74)	8.79	(8.95)	14.03	(8.74)	8.46	(9.02)
Performance-based culture (PBC)					6.61	(6.75)	6.61	(6.77)	6.56	(6.74)	7.84	(6.92)	8.31	(6.95)
Country-level controls														
GDPPC	0.00	(0.00)	0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)
GDPPC squared	0.00	(0.00)	0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)
Rule of law	0.58	(1.89)	0.53	(1.90)	0.46	(1.86)	0.46	(1.87)	0.38	(1.86)	0.52	(1.87)	0.45	(1.87)
Cross-level interactions														
PM x Independence							-0.10	(0.16)					-0.03	(0.19)
PM x Increase-income							-0.19	(0.16)					0.15	(0.21)
SSC x Independence									7.85*	(3.88)			7.64+	(4.18)
SSC x Increase-income									7.38+	(3.78)			10.85*	(4.71)
PBC x Independence											0.04	(2.54)	-0.10	(2.95)
PBC x Increase-income											-5.36+	(3.13)	-7.51*	(3.53)

Variance components							
Country-level variance	115.5	117	79.64	80.17	79.35	80.05	79.90
Individual-level variance	567.8	566.1	566	565.7	564.9	565.3	564
% ICC	16.90	17.13	12.34	12.41	12.32	12.40	12.41
Model fit							
Degree of freedom	8	10	13	15	15	15	19
Country-level Pseudo R2 from M0[b]	-2.67	-4.00					
Individual-level Pseudo R2 from M0	0.73	1.03					
LR test (from M0)	22.28 (8)	31.38 (10)					
Prob > Chi2	0.00	0.00					
Country-level Pseudo R2 from M1 [b]		-1.30					
Individual-level Pseudo R2 from M1		0.30					
LR test (from M1)		9.11 (2)					
Prob > Chi2		0.01					
Country-level Pseudo R2 from M2 [b]			31.93				
Individual-level Pseudo R2 from M2			0.02				
LR test (from M2)			9.62 (3)				
Prob > Chi2			0.02				
Country-level Pseudo R2 from M3 [b]				-0.67	0.36	-0.51	-0.33
Individual-level Pseudo R2 from M3				0.05	0.19	0.12	0.35
LR test (from M3)				1.42 (2)	5.85 (2)	6.00 (2)	11.08 (6)
Prob > Chi2				0.49	0.05	0.17	0.09
AIC	28967	28962	28959	28961	28957	28959	28960
Deviance	-14473	-14468	-14463	-14463	-14460	-14462	-14458

[a] Entrepreneurial motivation: 1 = necessity entrepreneur (reference category which is automatically omitted in STATA), 2 = independence motivated entrepreneur, 3 = increase-income motivated entrepreneur

[b] M0 = Null model, M1 = Model 1, M2 = Model 2, M3 = Model 3

N = 3,145 at individual–level, *n* = 26 countries; *** $p<0.001$, ** $p<0.01$, * $p<0.05$, + $p<0.1$

Hypothesis 1: The difference between necessity versus opportunity entrepreneurs in the pursuit of socio-environmental goals

In Model 2 of Table 2.6, we find a positive effect of the difference between necessity and opportunity entrepreneurs in pursuing socio-environmental goals ($\beta = 1.94$, $p < 0.05$). More particularly, the propensity of the pursuit of socio-environmental goals among necessity entrepreneurs is 1.94 times higher than that among opportunity entrepreneurs, which supports Hypothesis 1.

When distinguishing further between necessity entrepreneurs and two types of opportunity entrepreneurs (independence and increase-income motivated entrepreneurs), in Model 2 of Table 2.7, we find that the propensity of the pursuit of socio-environmental goals among increase-income motivated entrepreneurs is 3.33 times lower than necessity entrepreneurs ($\beta = -3.33$, $p < 0.01$). In contrast, we find no evidence of the difference between independence motivated entrepreneurs and necessity entrepreneurs in pursuing socio-environmental goals. Hypothesis 1 is partially supported.

Hypothesis 2: The moderating effects of Postmaterialism cultural values (PM) on the difference between necessity and opportunity entrepreneurs in the pursuit of socio-environmental goals

Through results from Model 4 of Table 2.6 as well as the result from Model 4 of Table 2.7, we fail to find support for Hypothesis 2.

Hypothesis 3: The moderating effects of Socially supportive culture (SSC) on the difference between necessity and opportunity entrepreneurs in the pursuit of socio-environmental goals

In Model 5 of Table 2.6, we find a significantly negative interactive effect of SSC with the difference between necessity and opportunity entrepreneurs in the pursuit of socio-environmental goals ($\beta = -6.40$, $p < 0.05$). To make the evaluation of the interaction easier, we display Figure 2.3 presenting the post–estimated values based on the cross-level interaction between SSC and the entrepreneurial motivations of young entrepreneurs (Necessity versus Opportunity) for the pursuit of socio-environmental goals. The vertical axis denotes the predicted values that the propensity of the pursuit of socio-environmental goals whereas the horizontal axis reflects the different levels of SSC from very

strong (+1 SD), strong (+0.5 SD), medium (mean), weak (–0.5 SD) and very weak (–1 SD). Figure 2.3 illustrates the significant differences between slopes for the two groups of young entrepreneurs: Necessity entrepreneurs versus Opportunity entrepreneurs. As seen in Figure 2.3, SSC promotes the pursuit of the socio-environmental goals of both opportunity and necessity entrepreneurs. When the level of SSC increases, the difference between opportunity and necessity entrepreneurs in pursuing socio-environmental goals narrows.

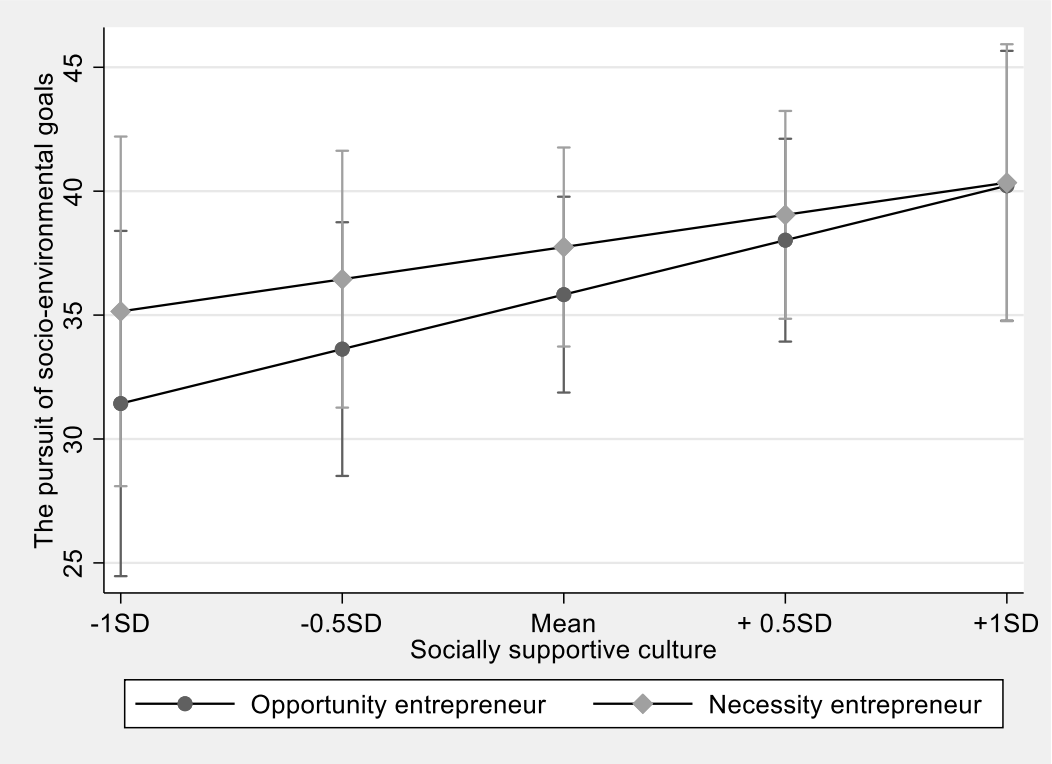


Figure 2.3 Interaction effect of socially supportive culture and the entrepreneurial motivations on the pursuit of socio-environmental goals

(H3, Table 2.6, Model 5)

Additionally, we consider conditional marginal effects with the 95% confidence interval for the differences between necessity and opportunity entrepreneurs in the pursuit of socio-environmental goals decrease as the level of SSC increases. Whenever the 95% confidence interval for the difference does not include zero, the difference can be considered to be statistically significant. In this case, while the difference between necessity and opportunity entrepreneurs in the pursuit of socio-environmental goals

is significant when SSC increase from weak to medium level, it is not significant when SSC reaches higher levels. Thus, Hypothesis 3 is supported partially.

For additional analysis, Model 5 of Table 2.7 reports the significantly positive moderating effects of SSC on the difference between independence motived entrepreneurs and necessity entrepreneurs on the pursuit of socio-environmental goals ($\beta = 7.85$, $p < 0.05$). We find the significantly positive moderating effects of SSC on the difference between increase-income motived entrepreneurs and necessity entrepreneurs on the pursuit of socio-environmental goals ($\beta = 7.38$, $p < 0.10$).

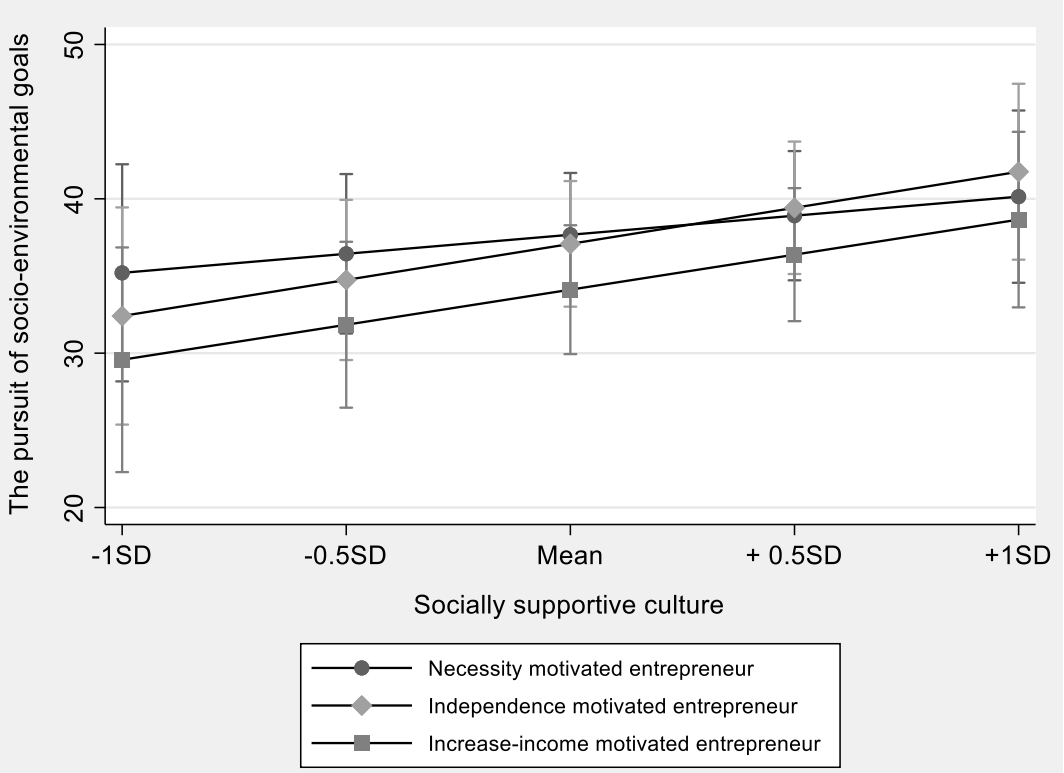


Figure 2.4 Interaction effects of socially supportive culture and the entrepreneurial motivations on the pursuit of socio-environmental goals

(H3, Table 2.7, Model 5)

Figure 2.4 illustrates that SSC encourages the pursuit of the socio-environmental goals of all three types of entrepreneurs. The impact of SSC on the propensity to pursue socio-environmental goals is weakest for necessity entrepreneurs, stronger for increase-income motivated entrepreneurs and strongest for independence motivated entrepreneurs. SSC increases from very low to medium levels,

the gap in the pursuit of socio-environmental goals between independence motivated entrepreneurs and necessity entrepreneurs becomes smaller. However, when SSC increase to high levels, the propensity of the pursuit of socio-environmental goals of independence motived opportunity entrepreneurs are stronger than that of necessity entrepreneurs, leading to widening the gap between them. Similarly, the higher the level of SSC, the smaller the difference in the pursuit of socio-environmental goals between increase-income motived entrepreneurs and necessity entrepreneurs.

We also consider conditional marginal effects with the 95% confidence interval for the differences between three types of entrepreneurs in the pursuit of socio-environmental goals decrease as the level of SSC increases. The difference between independence motivated entrepreneurs and necessity entrepreneurs in the pursuit of socio-environmental goals is insignificant at most levels of SSC (only except the very weak level). In contrast, the difference between increase-income motivated entrepreneurs and necessity entrepreneurs is significant and smaller when SSC increase from a very weak to a strong level (except the very strong level). Thus, Hypothesis 3 is partially supported.

Hypothesis 4: The moderating effects of Performance-based culture (PBC) on the difference between necessity versus opportunity entrepreneurs in the pursuit of socio-environmental goals

In Model 6 of Table 2.6, we find no evidence of a cross-level effect of PBC on the difference between opportunity versus necessity entrepreneurs of the pursuit of socio-environmental goals. Thus, Hypothesis 4 is not supported. For the additional analysis, in Model 6 of Table 2.7, we find a significantly negative interactive effect of PBC with the difference between increase-income motivated entrepreneurs versus necessity entrepreneurs (β = -5.36 $p < 0.10$) on the pursuit of socio-environmental goals while PBC does not impact the difference between independence motivated entrepreneurs versus necessity entrepreneurs.

Figure 2.5 shows that PBC advances the pursuit of the socio-environmental goals among all three types of entrepreneurs. The impact of PBC on the propensity to pursue socio-environmental goals is the weakest for increase-income motivated entrepreneurs, stronger for necessity entrepreneurs and independence motivated entrepreneurs. The higher the level of PBC, the wider the gap in the pursuit of socio-environmental goals between increase-income motivated entrepreneurs and necessity

entrepreneurs. In contrast, there is no difference between independence motived entrepreneurs and necessity entrepreneurs in pursuing socio-environmental goals.

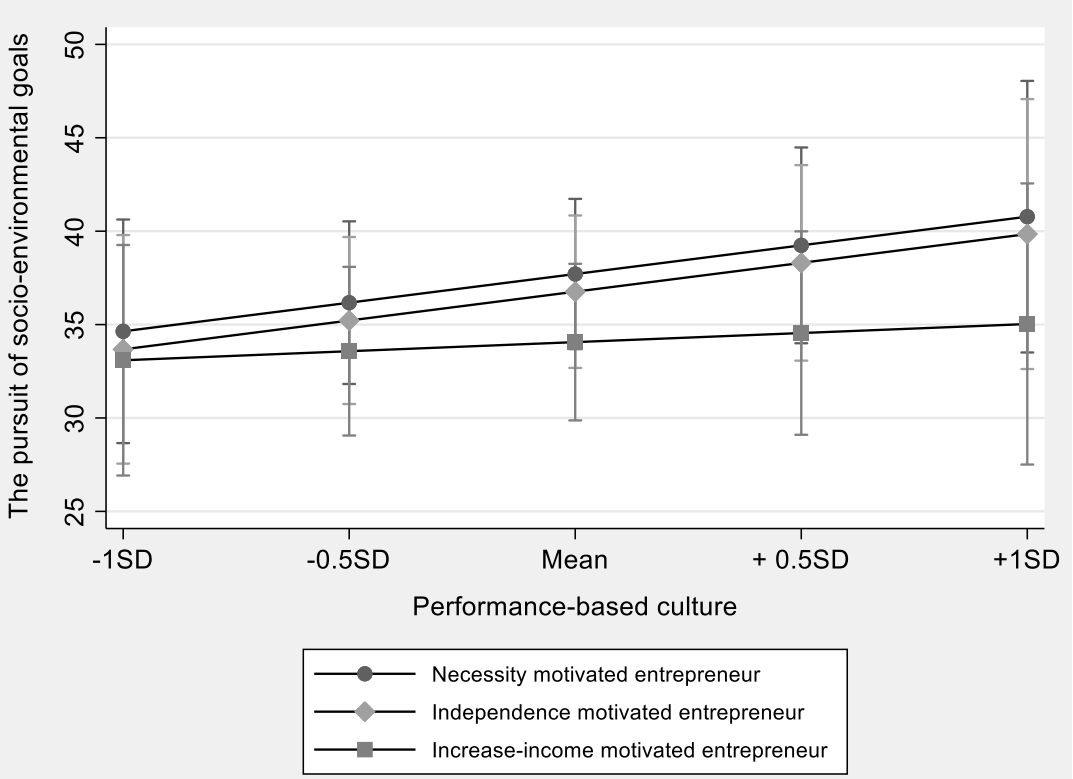


Figure 2.5 Interaction effects of performance-based culture and the entrepreneurial motivations and on the pursuit of socio-environmental goals

(H4, Table 2.7, Model 6)

We also consider conditional marginal effects with the 95% confidence interval for the differences between three types of entrepreneurs in the pursuit of socio-environmental goals decrease as the level of PBC increases. The difference between independence motivated entrepreneurs and necessity entrepreneurs in the pursuit of socio-environmental goals is insignificant at all levels of PBC (from very weak to very strong). In contrast, the difference between increase-income motivated entrepreneurs and necessity entrepreneurs is significant and larger when PBC increases. Hence, hypothesis 4 is partially supported.

Robustness checks:

We conduct several robustness checks to address the concern that various approaches on opportunity and necessity differentiation may provide different outcomes. We replicate the main (Table 2.6) and additional analyses (Table 2.7) using an alternative measure of opportunity/necessity differentiation.

The first robustness check. In our main results, we do not account for *"Have a job but seek better opportunities"* category in the first question. Therefore, as a robustness check, we examine whether adding this category changes the results of the main or additional analysis (Figure A.1 in Appendix A provides a detailed flow chart).

For the main analysis, we use the indicator of entrepreneurial motivation with two categories. ***Necessity entrepreneur (coded = 1)*** is identified by those who meet one in two the following criteria: (a) they are pushed into entrepreneurship due to no better choice for work (those who answer that *"No better choices for work"* or *"Others"* in the first question); or (b) they only seek to maintain their income (those who answer that "Just to maintain income" in the second question). ***Opportunity entrepreneur (coded = 0)*** is identified by those who meet one in two the following criteria: (i) they are pulled to entrepreneurship by opportunity (those who answer that *"Take advantage of business opportunity"* or *"Combination of both of the above"* or *"Have a job but seek better opportunities"* in the first question) to have independence (those who answer that *"To have greater independence"* in the second question); or (j) they are pulled to entrepreneurship by opportunity (those who answer that *"Take advantage of business opportunity"* or *"Combination of both of the above"* or *"Have a job but seek better opportunities"* in the first question) to increase their income (those who answer that *"To increase personal income"* in the second question).

For the additional analysis, we use another indicator of entrepreneurial motivation with 3 categories. ***Necessity entrepreneur (coded = 1, reference/base category)*** is identified by those who meet one in two the following criteria: (a) they are pushed into entrepreneurship due to no better choice for work (those who answer that *"No better choices for work"* or *"Others"* in the first question); or (b) they only seek to maintain their income (those who answer that "Just to maintain income" in the second question). ***Independence motived entrepreneur (coded = 2)*** is identified by those who meet both

following criteria: (k) they are pulled to entrepreneurship by opportunity (those who answer that *"Take advantage of business opportunity"* or *"Combination of both of the above"* or *"Have a job but seek better opportunities"* in the first question) and (l) they desire independence (those who answer that *"To have greater independence"* in the second question). ***Increase-income motived entrepreneur (coded = 3)*** is identified by those who meet both following criteria: (m) they are pulled to entrepreneurship by opportunity (those who answer that *"Take advantage of business opportunity"* or *"Combination of both of the above"* or *"Have a job but seek better opportunities"* in the first question) and (n) they desire to increase their wealth (those who answer that *"To increase personal income"* in the second question).

The results of the first robustness check are reported in Appendix A. The tables (Table A.1 for the main analysis and Table A.2 for the additional analysis in Appendix A) alongside the figures plotting the interaction effects (Figures A.1-A.3 in Appendix A) indicate that the results remain qualitatively similar.

The second robustness check. It is acknowledged that there are different possible ways of thinking about opportunity/necessity differentiation, thus we apply other measures of entrepreneurial motivation to distinguish opportunity and necessity entrepreneurs for the second robustness check. We examine another indicator of entrepreneurial motivation which only focuses on the first question rather than on the combination of two questions. This indicator is measured with two categories. ***Necessity entrepreneur (coded =1)*** is considered as being pushed into entrepreneurship due to no better choice for work (those who answer that *"No better choices for work"* in the first question). ***Opportunity entrepreneurs (coded = 0)*** is considered as pulled to entrepreneurship by opportunity (those who answer that *"Take advantage of business opportunity"* in the first question). In this approach, we do not account for *"Combination of both of the above", "Have a job but seek better opportunities"* and *"Others"* categories in the first question. In Table A.3 of Appendix A, the results of both main direct and interactive effects are non-significant. This suggests that when measuring opportunity-necessity motivation, masking existing effects of other differentiations in entrepreneurial motivations (e.g., the differentiation between independence and increase-income motive of opportunity entrepreneurs) need to be considered carefully.

Table 2.8 Summary of the results

	Hypothesis	Result	Conclusion
H1	The propensity of the pursuit of socio-environmental goals of necessity entrepreneurs is stronger than that of opportunity entrepreneurs.	Necessity entrepreneurs pursue 1.95 times socio-environmental goals more than opportunity entrepreneurs do.	**H1 is supported**
		The propensity of the pursuit of socio-environmental goals among increase-income motivated entrepreneurs is 3.33 times lower than necessity entrepreneurs while we find no evidence of the difference between independence motivated entrepreneurs and necessity entrepreneurs in pursuing socio-environmental goals.	**H1 is supported partially**
H2	Post-materialism attenuates the relationship between necessity-opportunity entrepreneurship and the pursuit of socio-environmental goals, that is, the difference between the opportunity and necessity entrepreneurs in pursuing socio-environmental goals is more pronounced in countries with lower levels of postmaterialism cultural values, and weaker in countries with higher levels of postmaterialism cultural values.	We find no evidence of the moderating effect of PM on the difference between opportunity versus necessity entrepreneurs in the pursuit of socio-environmental goals.	H2 is not supported
		We find no evidence of the moderating effect of PM on the difference in the pursuit of socio-environmental goals between independence motivated entrepreneurs and necessity entrepreneurs or between increase-income-motivated entrepreneurs and necessity entrepreneurs.	H2 is not supported
H3	Socially supportive culture attenuates the relationship between necessity-opportunity entrepreneurship and the pursuit of socio-environmental goals, that is, the difference between the	When the level of SSC increases, the difference between opportunity and necessity entrepreneurs in pursuing socio-environmental goals narrows.	**H3 is supported partially**

	opportunity and necessity entrepreneurs in pursuing socio-environmental goals is more pronounced in countries with lower levels of socially supportive cultural norms, and weaker in countries with higher levels of socially supportive cultural norms.	• SSC increases from very low to medium levels, the difference in the pursuit of socio-environmental goals between necessity entrepreneurs and independence motivated entrepreneurs lessens. However, SSC increase to high levels, the propensity of the pursuit of socio-environmental goals of independence motived entrepreneurs are stronger than that of necessity entrepreneurs, thereby, widen the difference between them. • The higher the level of SSC, the less the difference in the pursuit of socio-environmental goals between necessity entrepreneurs and increase-income motivated entrepreneurs.	**H3 is supported partially**
H4	Performance-based culture amplifies the relationship between opportunity-necessity entrepreneurship and the pursuit of socio-environmental goals, that is, the difference between the opportunity and necessity entrepreneurs in pursuing socio-environmental goals is weaker in countries with lower levels of performance-based cultural norms, and stronger in countries with higher levels of performance-based cultural norms.	We find no evidence of the moderating effect of PBC on the difference between opportunity versus necessity entrepreneurs in the pursuit of socio-environmental goals.	H4 is not supported
		• There is no difference between independence motivated entrepreneurs and necessity entrepreneurs in pursuing socio-environmental goals. • When the level of PBC increases, the difference in the pursuit of socio-environmental goals between increase-income motivated entrepreneurs and necessity entrepreneurs increases.	**H4 is supported partially**

2.5 Discussion

Drawing on the cultural theory and the literature on opportunity-necessity motivation, this study unpacks how necessity entrepreneurs differ from opportunity entrepreneurs in socio-environmental entrepreneurship across cultural contexts. We find that the propensity to pursue socio-environmentally oriented entrepreneurship of necessity entrepreneurs is higher than that of opportunity entrepreneurs. Furthermore, this difference is shaped (moderated) by cultural descriptive norms, (SSC and PBC) but not by cultural values (PM). Our findings have important contributions to the social and environmental entrepreneurship literature along with the research on entrepreneurial motivation.

2.5.1 Theoretical contributions

This study advances our understanding of social and environmental entrepreneurship. Our findings offer new insights into the motivation of socio-environmentally oriented entrepreneurs by revealing surprising heterogeneity of socially and environmentally oriented entrepreneurs. The surprising results in our study show that the propensity of the pursuit of socio-environmental goals of necessity entrepreneurs are higher than that of opportunity entrepreneurs. This contrast with the widespread belief that socio-environmental oriented entrepreneurs are those who engage in opportunity entrepreneurship with social and environmental goals motivations (Stephan and Drencheva, 2017 for a review). Accordingly, we encourage that social and environmental entrepreneurship scholars should consider applying other approaches on entrepreneurial motivations (e.g., opportunity-necessity motivation) to further research on socio-environmentally oriented entrepreneurial activities complementing the existing emphasis on pro-social and pro-environmental motivations (Hockerts, 2017; Hockerts and Wüstenhagen, 2010; Nga and Shamuganathan, 2010; Kirkwood and Walton, 2010; Miller et al., 2012; Ruskin et al., 2016).

Furthermore, this study adds value to the entrepreneurial motivation literature by distinguishing between two types of opportunity entrepreneurs, namely, independence and increase-income motivated entrepreneurs. Whereas previous studies on entrepreneurial motivation mainly focus on the opportunity-necessity dichotomy (Stephan et al., 2015 for a general review), the differentiation between

independence motive, and the increase-income motive of opportunity entrepreneurs is rarely included in analyses (Hessels et al., 2008a; Hessels et. al, 2008b). Our finding highlights that necessity entrepreneurs are more socio-environmentally oriented than increase-income-motivated entrepreneurs whilst there is no difference between necessity and independence-motivated entrepreneurs. In addition, the finding shows that PBC moderates the difference between necessity and increase-income-motivated entrepreneurs in pursuing socio-environmental goals. However, when combining two motives into one variable - opportunity entrepreneurs, we fail to see the moderating effect of PBC on the difference between opportunity versus necessity entrepreneurs in the pursuit of socio-environmental goals. This suggests the importance of the differentiation between independence and increase-income motive of opportunity entrepreneurs for research driers or consequences of entrepreneurial motivation, which is under-developed in the existing literature. Thus, future studies should continue distinguishing three entrepreneurial motives, that is, the necessity motive, the independence motive, and the increase-income motive.

Our study also responds to calls for more context-sensitive theory and research on entrepreneurship (Welter, 2011; Zahra and Wrights, 2011) and advances understanding of contextualizing social and environmental entrepreneurship. We offer new insights on how context can shape the link between entrepreneurial motivation and socio-environmental entrepreneurship.

First, this study enriches our understanding of how cultural contexts influence the difference between opportunity and necessity entrepreneurs in socio-environmental entrepreneurship through two distinct mechanisms of cultural values (postmaterialism cultural values) and of cultural descriptive norms (SSC and PBC). Our findings show that whereas cultural descriptive norms, SSC and PBC, moderate the difference between necessity and opportunity entrepreneurs in pursuing socio-environmental goals, post-materialist cultural values do not. There is a plausible explanation for such results. Whilst cultural values "may be a strong prior predictor of an initial decision to engage in entrepreneurship" (Hopp and Stephan, 2012, p.920), cultural descriptive norms are expected to be a strong determinant of behaviour (Cacciotti and Hayton, 2017) and have more direct impacts on entrepreneurial behaviour (Stephan and Pathak, 2016). In this study, we focus on young entrepreneurs,

who have already made the decision of entrepreneurship. Accordingly, future research should consider continuing to explore how cultural values and descriptive norms affects differently entrepreneurial activities, which is overlooked in the existing literature (Stephan et al. 2014; Stephan and Pathak, 2016)

Second, our integrative framework between entrepreneurial motivation and cross-cultural model enabled us to bridge the individual-centric and context-centric perspective to explain cross-national variance in the propensity of the pursuit of the socio-environmental goals of new entrepreneurs. As emphasized by Stephan, Hart and Drews (2015), the focus on motivations alone is not a useful route to explain entrepreneurial activities. Instead, the effect of entrepreneurial motivations on entrepreneurial activities should be considered in specific situational contexts. However, the literature reviews show that the role of context remains under-appreciated, both in social and environmental entrepreneurship research in general as well as in the link between motivation and socially and environmentally oriented entrepreneurial activities in particular (see reviews of Gast et al., 2017; Saebi et al., 2019). Based on our findings, we do not believe that the heterogeneity in socially and environmentally oriented entrepreneurship can be explained solely by focusing on the enterprising individual or the environment. Our integrative framework allowed us to offer a theoretically grounded and novel approach to understanding how the pursuit of social and environmental goals is co-determined by entrepreneurial motivation and the cultural contexts where entrepreneurs are embedded.

2.5.2 Practical implications

Our findings also have implications for policymakers. First, policymakers commonly undervalue those who are forced to choose self-employment out of necessity much more than those who engage in entrepreneurship out of the business opportunity. Even, policies target to increase the rate of opportunity entrepreneurs while decreasing the rate of necessity entrepreneurs in the economies. The findings in our study, however, suggest that necessity entrepreneurs are more socio-environmentally oriented than opportunity entrepreneurs. In other words, entrepreneurs out of necessity are an important potential resource for the resolution to social and environmental issues in countries. In this sense, our study provides new insights for governments to reconsider and value the role of necessity entrepreneurship

more. Policies should also aim to minimize the social bias that portrays necessity entrepreneurs as less capable and less beneficial to society than opportunity entrepreneurs. They should explicitly encourage the pursuit of socio-environmental entrepreneurship by necessity entrepreneurs and ensure a fairer allocation of entrepreneurial resources to them. Furthermore, policies should realize that long-established and prevailing belief places necessity entrepreneurs in a disadvantaged position compared to opportunity entrepreneurs and, as such, necessity entrepreneurs will need additional support to start business ventures.

Furthermore, our study shows that SSC and PBC promote socio-environmental entrepreneurship among all types of entrepreneurs regardless of their motivation. This suggests that in societies with higher levels of SSC or PBC, significantly more entrepreneurs tend to choose to pursue socio-environmental goals. Meanwhile, some scholars point out that if there is a misalignment between formal and informal institutions (culture as a form of informal institutions), the informal one has a stronger and more permanent influence on entrepreneurial activities and even "the informal institutions may reduce the expected effects of the formal institutional change" (Eesley et al., 2018, p.399). In that sense, formal institutions consistent with cultural contexts are essential for creating the necessary conditions required for the development of socio-environmentally oriented entrepreneurial activities. The enforcement of policies or regulations that are not line up with cultural conditions might be costly but ineffective. Therefore, policymakers need to carefully analyse which cultural conditions where entrepreneurs are embedded before implementing specific policy tools to promote socio-environmental entrepreneurship.

2.5.3 Limitations and Directions for Future Research

Our study is considered in light of several limitations which represent avenues for future research.

First, although our research utilizes the distinction between opportunity and necessity motivation, we recognize that this approach may over-simplify the complexity and multifacetedness of motivations underlying socio-environmental entrepreneurship (Dencker et al., 2019; Kirkwood and Walton, 2010). Besides, the concept of opportunity in entrepreneurship is subject to debate (Davidsson,

2016). Moreover, we applied GEM motivation measurement, which only relies on a sole question to differentiate between opportunity and necessity motivation. Such measurement is generally less reliable compared to multi-item indices (Stephan et al., 2015). However, one of the crucial aims of this study is to shed new light on one fact that there are individuals who are pushed into socio-environmentally oriented entrepreneurial activities, that is ignored by previous studies which predominantly overemphasize portraying pro-social and pro-environmental motivations. In addition, in comparison to other datasets, GEM is currently the largest data source for research on comparative international entrepreneurship, providing information in terms of entrepreneurial motivation classification.

Second, an entrepreneur's motivation may vary over time and the maturity process of an enterprise. However, due to the availability of the GEM data source, we use cross-sectional data. We encourage future researchers to apply longitudinal designs to explore the determinants of the pursuit of socio-environmental goals throughout the entire entrepreneurial process. Tracking entrepreneurs over time can raise more our knowledge of how the interplay between contextual conditions and motivation might lead to switches in goals as the entrepreneurs experiencing through different entrepreneurial stages.

Third, we also acknowledge that the number of national contexts represented in our sample is still limited although we draw on a rich multi-country dataset which enables us to apply multilevel modelling. This leads to the statistical power of our analyses that may be too low to identify all the expected effects. Thus, future research may replicate our findings based on a dataset including a greater variety of national contexts to explore potential linkages highlighted in our study.

Finally, the measurement of the dependent variable in our study entailed a trade-off logic between socio-environmental goals and economic goals. Nonetheless, many scholars point out that socio-environmentally oriented enterprises can address social and environmental issues by leveraging market-based activities (Battilana and Lee, 2014; Miller et al., 2012). The literature even provided empirical evidence that entrepreneurs can pursue multiple goals simultaneously and even reap superior benefits (Stephan et al., 2019). Hence, we encourage future work to explore whether the difference in entrepreneurial motivation affects the pursuit of entrepreneurial goal multiplicity.

2.6 Conclusion

The literature on the motivation of socio-environmental oriented entrepreneurs seemly ignores the possibility of pursuing socio-environmental goals by entrepreneurs out of necessity. Our study widens our understanding by drawing attention to this overlooked research on the difference between opportunity and necessity entrepreneurs in socio-environmental entrepreneurship and how this difference is shaped by cultural conditions. Our surprising findings showcase that necessity entrepreneurs are more socio-environmentally oriented than opportunity entrepreneurs. Cultural norms in SSC and PBC societies moderate this difference. Accordingly, we offer new insights into the understanding of the role of entrepreneurial motivation and the context for social and environmental entrepreneurship.

Chapter 3

Innovation of entrepreneurs pursuing social and environmental goals across institutional contexts

Abstract

This study proposes goal heterogeneity as a key factor in explaining the variability in innovative activities across countries. We investigate how the pursuit of social and environmental goals affects the engagement of entrepreneurs in innovative activities. Integrating institutional theory with the goal heterogeneity perspective in an innovation context, we also explore how institutional contexts affect these relationships. Applying multilevel logit regressions with 2,895 young entrepreneurs in 26 countries (Global Entrepreneurship Monitor data), we find that entrepreneurs pursuing social and environmental goals are more innovative than those pursuing economic goals. Furthermore, we find some empirical evidence of the moderation effects of three institutional pillars, that is government activism, socially supportive culture, and performance-based culture, on the positive link between the pursuit of social goals and product innovation. These findings advance our understanding of innovative activities as a potential consequence of socially and environmentally oriented entrepreneurship. This study also enriches our understanding of the important role of institutional factors on socially and environmentally oriented entrepreneurial activities as well as on innovation.

Keywords: Innovation, social and environmental goals, goal heterogeneity, institutional theory, Global Entrepreneurship Monitor

3.1 Introduction

Innovation, which is a process of transforming an idea into a new product or process (Baregheh, Rowley and Sambrook, 2009), is considered as the key to an organization's competitive advantage and long-term survival (Banbury and Mitchell, 1995; Kim and Mauborgne, 2014). Many scholars indicate that innovation is strongly related to entrepreneurship (e.g., Schumpeter, 1982; Davidsoon, 2004; Lumpkin and Dess, 1996). Likewise, despite the absence of a unifying framework of social and environmental entrepreneurship due to their contested nature (Choi and Majumdar, 2014), the existing theoretical literature shows the consensus of the central role of innovation in social and environmental entrepreneurship (Austin et al., 2006; Dean and McMullen, 2007; Peredo and McLean, 2006; Schaltegger and Wagner, 2011; Zahra et al., 2009). Indeed, social entrepreneurship is defined as "activities and processes undertaken to discover, define, and exploit opportunities in order to enhance social wealth by creating new ventures or managing existing organizations in an innovative manner" (Zahra et al., 2009, p.519) and the social entrepreneurs are considered as "the initiator of a social entrepreneurial endeavour and as the innovator" (Choi and Majumdar, 2014, p.367). Environmental entrepreneurship literature also emphasises innovation as an important means of resolving market failure problems and environmental issues (Dean and McMullen, 2007) and environmental entrepreneurs address the ecological issues by "their breakthrough environmental innovations" (Schaltegger and Wagner, 2011, p.228). Yet, while we know that commercial entrepreneurship is an important source of innovation (e.g., Acs and Audretsch, 1988; Acs et al., 2009; Drucker, 1998; Koellinger, 2008), so far, we know very little about how social and environmental entrepreneurship influence entrepreneurial innovation (Hoogendoorn et al., 2020).

Additionally, differences in pursued goals may lead to different consequences on entrepreneurial behaviour (Shane et al., 2003; Van de Ven, Sapienza and Villanueva, 2007) such as innovative activities or even the various types of innovation (e.g., product and process innovation). Accordingly, considering the heterogeneity in goals enrich our understanding of what drives differences in entrepreneurial innovation (Colombelli, Kraff and Vivarelli, 2016), which is of little interest in the previous literature (Hoogendoorn et al., 2020; Stephan et al., 2019). Therefore, in this study, drawing

on differences between pursuing other-regarding interests (social and environmental goals) versus self-regarding interests (economic goals), we explore the role of goal heterogeneity in explaining variability in innovative activities.

Furthermore, differences in pursued goals are contingent on the environment, whereby, the impact of goal heterogeneity on entrepreneurial activities (e.g., innovation) may differ depending on the context in which they operate. Indeed, according to the GEM data (Bosma et al., 2009; Reynolds et al., 2005), whilst the most entrepreneurial economies in the world would be poor developing countries, the aggregate contribution of entrepreneurs to innovation tends to be higher in high-income economies where self-employment rates tend to be lower. This contrast, therefore, calls to attention the influence of context on entrepreneurial innovation (Autio et al., 2014; Welter, 2011).

Institutional contexts are considered as not only affect the decision to create a venture but also channel entrepreneurial endeavours into more or less innovative directions (Baumol, 2010). Despite the emphasis on the important role of institutional contexts on innovation (Autio et al., 2014), to date, research on the effect of institutional conditions on innovative activities of socially and environmentally oriented entrepreneurs is seemly overlooked in both theoretical and empirical literature (except for Hoogendoorn et al., 2020). Accordingly, in this paper, we incorporate the institutional dimensions and goal heterogeneity perspective into explaining variability in innovative activities across countries. Drawing on Scott's institutional theory (2005), we propose government activism, postmaterialism cultural values, and socially supportive cultural norms as three institutional pillars - regulatory, cognitive and normative institutions (Scott, 2007). We argue that these three institutional factors (government activism, postmaterialism cultural values, and socially supportive cultural norms) moderate the relationship between goal heterogeneity and innovative activities.

To fulfil the aforementioned gaps of our knowledge, we build a multi-level model to investigate: how goal heterogeneity affects the engagement of entrepreneurs in innovative activities (Research question 1) and how institutional contexts influence these relationships (Research question 2). Through integrating institutional theory with the goal heterogeneity perspective in an innovation context, we examine our predictions in a multilevel study of 2,895 young entrepreneurs in 26 countries.

We find that entrepreneurs pursuing social and environmental goals are more likely to engage in innovative activities than those pursuing economic goals. We also identify the moderation effects of three institutional pillars: government activism, postmaterialism cultural values, and socially supportive cultural norms. Our findings show that all three institutional factors strengthen the positive link between the pursuit of social goals and innovative activities, but they do not moderate the link between the pursuit of environmental goals and innovative activities.

Accordingly, our study makes the following contributions. First, we advance our understanding of innovative activities as a potential consequence of socially and environmentally oriented entrepreneurship, which is emphasized in existing theoretical literature but still lack empirical studies. Second, we further unpack the role of goal heterogeneity in entrepreneurial innovation. Our study shows that goal heterogeneity is a source of entrepreneurs' variances in choosing the types of innovation. Third, we also advance a new profound understanding of the role of institutional contexts on not only social and environmental entrepreneurship but also on innovative activities by shedding light on how innovative activities of entrepreneurs pursuing social and environmental goals are supported or impeded by three institutional pillars (government activism, postmaterialism cultural values, and socially supportive cultural norms).

3.2 Research framework and hypotheses

3.2.1 The pursuit of goals

Goals in entrepreneurship used to be known as a single focus on economic goals, which is creating profit for entrepreneurs and their partners. Indeed, traditionally, goals for starting a business are considered to be economic (Schumpeter, 1934). Accordingly, the entrepreneur is defined as an individual who does something for economic gain (Carsrud and Brännback, 2009). Yet, there is increasing acknowledgement of the heterogeneity of entrepreneurship (Schaefer et al., 2015; Schaltegger and Wagner, 2011; Thompson et al., 2011; Welter et al., 2017) which is constituted from the diversity in entrepreneurial goals (Carter et al., 2003; Shaver et al., 2001). Social and environmental entrepreneurship is an example of such goal heterogeneity. Accordingly, besides the economic goals, entrepreneurs may pursue social or environmental goals, which create desirable outcomes for not only the organization but also stakeholders, society and the environment (Elkington, 2004).

The pursuit of social goals reflects an entrepreneur's propensity to direct their organization's activities towards the creation of social value. Socially oriented entrepreneurs care for the alleviation of social issues (Thompson et al., 2011) such as poverty and poor living condition, inequality, social exclusion, public health issues. These entrepreneurs focus on solving societal problems (Mair and Marti, 2006; Short et al., 2009; Zahra, Gedajlovic et al., 2009) through providing goods to marginalised and disadvantaged groups or providing access to innovation for deprived market segments.

The pursuit of environmental goals reflects an entrepreneur's propensity to direct their organization's activities towards the creation of environmental value (preservation and regeneration of the natural environment) (Dean and McMullen, 2007; Schaltegger, 2002; York and Venkataraman, 2010). Environmentally oriented entrepreneurs focus on solving environmental problems through their business (Thompson et al., 2011) such as providing eco-friendly products and services; preventing pollution; recycling, producing clean energy; building an environmental management system.

3.2.2 Innovative activities

Innovation reflects entrepreneurs' decisions on the engagement in innovative activities in their business, including new products/services or new production processes. While product innovation refers to new products or services to meet external users' needs, process innovation refers to new methods introduced into production or service operation (Damanpour, 2010). The previous literature points out that there are many differences between product and process innovation (Damanpour, 2017; Schilling, 2010; Un and Asakawa, 2015). Hence, we outline the principal distinctions between product and process innovation through four dimensions in Table 3.1.

First, there is an explicit difference in the principal purpose that entrepreneurs aim for when introducing product or process innovation. In the case of introducing product innovation, entrepreneurs focus on the introduction of new products/services in new markets to generate differentiation in their goods with those of competitors and market expansion. In contrast, through process innovation, entrepreneurs seek to achieve efficiency and effectiveness of operational manner through decreasing costs or increasing features and quality (Ettlie and Reza, 1992; Hatch and Mowery, 1998).

Second, the original outcomes of the two types of innovative activities differ remarkably. The result of product innovation is that new products or services are introduced in the market. Consequently, the success of product innovation also depends on external customers' feedbacks (Hauser et al., 2006). In contrast, the result of process innovation is internal changes in an organization. The achievement level of process innovation is evaluated internally by entrepreneurs (Repenning and Sterman, 2002).

Third, the requirement of the degree of novelty in process innovation is somewhat lower than in product innovation. The generation of new products or services to satisfy customers' unmet needs in the market may require a higher level of innovation (Danneels, 2002; Un, 2010) while changes and improvements in the internal organization may provide lower degrees of innovation (Stadler, 2011).

Fourth, compared to process innovation, the ability of competitors to imitate product innovation appears to be easier. Due to the introduction of a specific product or service to the market, it is difficult for entrepreneurs to prevent the imitation of their innovative goods. Competitors may even improve upon and invent product innovation without violating proprietary protection (Damanpour, 2010). In

contrast, it is easier for entrepreneurs to limit the imitation of process innovation due to its nature of complexity, causal ambiguity, and specific context as well as tacit and secret codified information (Hatch and Mowery, 1998).

Table 3.1 The differences between Product and Process innovation

	Product innovation	**Process innovation**
The principal purpose	Focus on the introduction of a new product or service in a new market aiming to generate differentiation and market expansion.	Focus on efficiency and effectiveness of operational manner aiming to decrease costs or increase product features and quality.
The original result	New product or service	Internal changes
The degree novelty	A higher level of innovation	A lower level of innovation
The ability for imitation	Due to presenting an explicit product or service, it is easier for imitation.	Due to the nature of complexity, causal ambiguity, and specific context as well as tacit and secret codified information, it is more difficult for imitation.

3.2.3 The pursuit of goals and Innovative activities

The nature of social and environmental problems is complex, unpredictable and unconventional, and thus, they are considered as grand challenges in humankind (Ferraro et al., 2015). As a result, to resolve such grand challenges, entrepreneurs pursuing social and environmental goals probably have to employ “bold ideas” and adopt “less conventional approaches” (Colquitt and George, 2011, p. 432). In other words, innovative activities may be a crucial instrumental to achieve social and environmental goals. Indeed, in the literature, socially oriented entrepreneurs are commonly portrayed as "the initiator of a social entrepreneurial endeavour and as the innovator" (Choi and Majumdar, 2014, p.367) and environmentally oriented entrepreneurs are regularly depicted as those who address the environmental

issues by "their breakthrough environmental innovations" (Schaltegger and Wagner, 2011, p.228). Notwithstanding the theoretical literature seemly shows a consensus the importance of innovation in socially and environmentally oriented entrepreneurship (e.g., Austin et al., 2006; Dean and McMullen, 2007; Schaltegger and Wagner, 2011; Zahra et al., 2009), empirical research on innovation of entrepreneurs pursuing social and environmental goals appears to be surprisingly scant (Hoogendoorn et al., 2020).

Additionally, differences in pursued goals may result in different consequences for innovation (Shane et al., 2003; Van de Ven et al., 2007). Notwithstanding it is stressed the difference in entrepreneurial goals as an important source of heterogeneity in entrepreneurial innovation (Colombelli et al., 2016), there are, to date, few studies examine the link between goal heterogeneity and innovative activities in the literature of commercial as well as social and environmental entrepreneurship (Hoogendoorn et al., 2020; Stephan et al., 2019). In particular, Stephan, Andries, and Daou (2019) explore that the pursuit of social and economic goals by Belgian commercial firms affect their innovation performance through different knowledge sourcing practices. Hoogendoorn, van der Zwan and Thurik (2020) also find that the pursuit of environmental goals relative to economic ones positively influences entrepreneurs' incentives to innovate. Yet, despite the emphasis on an important source of goal heterogeneity in explaining innovative activities, the current literature only focuses on the difference between economic and either environmental or social goals but lack the study on all three goals (economic, social, environmental goals). Therefore, this study aims to further unpack the role of goal heterogeneity, in particular differences between pursuing other-regarding interests (both social and environmental goals) versus self-regarding interests (economic goals), in explaining variability in innovative activities as well as the type of innovation (product and process innovation) implemented by entrepreneurs pursuing different goals.

Despite some differences, both social and environmental goals reflect caring about other-regarding interests instead of self-regarding ones (e.g., economic goals). Thus, we expect that both the pursuit of social and environmental goals positively influences innovative activities, including both product and process innovation. That is because, first, solving social and environmental issues in the context of constrained resources requires innovation. On one hand, while socially and environmentally oriented entrepreneurship can be found in a variety of contexts, it is most closely associated with environments characterized by constrained resources (Desa, 2010; Peredo and Chrisman, 2006). Operating within such penurious environments, socially and environmentally oriented entrepreneurs are compelled to find innovative ways of using existing resources and acquiring new resources to both achieve financial sustainability and generate social and environmental impacts (Di Domenico et al., 2010). On the other hand, many social and environmental challenges have remained to be unaddressed for a long time. That might be because of the existing methods' inability to offer remedies, thus, pushing socially and environmentally oriented entrepreneurs to creatively generate solutions using non-conventional resources and approaches in ways to address these social and environmental problems (Kickul et al., 2018).

Second, the pursuit of social or environmental goals is positively related to cooperative and collaborative activities, which facilitate entrepreneurs to engage in innovation. Compared to economically oriented entrepreneurship, socially and environmentally oriented ones often engage with more and different stakeholders and in more external information sourcing for innovation purposes (Stephan et al., 2019). Indeed, to be able to discover and implement efficient solutions for social and environmental issues, it is required that socially and environmentally oriented entrepreneurs commonly associate with diverse stakeholders (e.g., customers, suppliers, distributors, community, government and other organizations) over long periods (Stephan et al., 2016). Also, they need to actively engage in cross-sectoral collaborations (Stephan et al., 2016). Such broad cooperation and collaboration will facilitate entrepreneurs pursuing social and environmental goals to improve their ability, access new knowledge, and mobilize needed resources, thereby, that will enable their innovative activities (Greer and Lei, 2012).

In line with our argument, Hoogendoorn, van der Zwan and Thurik (2020) provide empirical evidence of the important influences of environmental and social value creation (over the economic value creation) on the entrepreneurs' innovativeness. Additionally, Stephan, Andries and Daou (2019) pointed out that organizations that strongly endorse social goals more in knowledge sourcing activities to develop innovations necessary to generate a social impact. Similarly, previous research points out that social initiatives are more likely to be innovative than other kinds of business (Hechavarría and Welter, 2015). Taken together, we hypothesize:

Hypothesis 1: The entrepreneurs that pursue social goals (relative to economic goals) are more likely to engage in innovative activities: (a) product innovation (b) process innovation.

Hypothesis 2: The entrepreneurs that pursue environmental goals (relative to economic goals) are more likely to engage in innovative activities: (a) product innovation (b) process innovation.

3.2.4 Institutional factors as the moderators of the link between the pursuit of goals and innovative activities

The literature prompts entrepreneurship research to pay more attention to the context in which entrepreneurial activities take place (Autio et al., 2014; Welter, 2011). One of the most common approaches in contextualizing entrepreneurship is that analysing entrepreneurial activities embedded in institutional theory (North, 1990). Indeed, institutional theory becomes an increasingly common lens in entrepreneurship research (Su et al., 2017). Scholars suggest that institutional contexts not only affect the decision to create a venture but also channel entrepreneurial endeavours into more or less innovative directions (Baumol, 2010).

Institutions refer to "the deeper and more resilient aspects of social structure", which "become established as authoritative guidelines for social behavior" (Scott, 2005, p.2). Formal institutions refer to the constraints and incentives formed as laws, regulations and rules that aim to guide individual and organizational actions (Scott, 2005). Informal institutions are more implicit, slowly changing, culturally transmitted (Stephan et al., 2015), reflect the social arrangements and norms that influence how formal

institutions operate in practice. Scott (2007) extended institutional theory by formulating a three-pillar framework of institutional forces: regulatory, cognitive and normative. The regulative pillar stem primarily from governmental legislation and industrial agreements and standards (Bruton et al., 2010; Scott, 2007). While the structures of cognitive and normative pillars can be transmitted by culture (DiMaggio and Powell, 2012; Jepperson, 1991), there are differences between the two types of informal institutions. The cognitive institutional pillar includes taken-for-granted elements and shared understanding (Scott, 2007), which is closely connected to cultural values. The normative pillar represents social standards and expectations on actions that organizations and individuals ought to take (Bruton et al., 2010; Scott, 2007), which is associated with descriptive norms in a particular cultural context (Javidan et al., 2006; Stephan and Uhlaner, 2010). As a result, following the framework on three institutional pillars studied by Stephan et al., 2015, this study examines the effects of institutional factors on innovative activities of socially and environmentally oriented entrepreneurs, through: (1) government activism represents the regulative pillar, (2) postmaterialism cultural values represent the cognitive pillar, (3) socially supportive cultural norms represent the normative pillar.

3.2.4.1 Formal regulatory institution – Government activism (GA)

Government activism refers to the scale of the national wealth redistribution through tax systems and public expenditures (Aidis et al., 2012). It is also associated with the ability of the government to address social and environmental issues (Stephan et al., 2015). In this paper, we consider the effect of government activism under the institutional support perspective.

We expect that government activism facilitates socially and environmentally oriented entrepreneurs to engage in innovative activities. Previous studies provide empirical evidence on the positive role of government activism towards socially and environmentally oriented entrepreneurial activities (Hoogendoorn, 2016; Stephan et al., 2015). Accordingly, the more active governments are, the more support entrepreneurs pursuing social or environmental goals obtain. On one hand, Active governments can help socially and environmentally oriented entrepreneurs through providing both tangible (e.g., grants and subsidies) and intangible resources (e.g., supports related to social networks,

efficient procedures or potential market) (Korosec and Berman, 2006; Meyskens et al., 2010; Meyskens et al., 2010). As the result, the financial supports of the government may contribute to enrich funding, which enables socially and environmentally oriented entrepreneurs to invest in innovative activities. On the other hand, the active government may also help to foster collaboration between socially and environmentally oriented entrepreneurs and stakeholders, which facilitates initiating and sustaining innovative activities. Building on the knowledge-based view (Grant, 1996; Nonaka, 1994; Teece et al., 1997) on the crucial role of new ideas and knowledge in innovation, many previous studies indicate the positive effect of collaboration on innovative activities (Dittrich and Duysters, 2007; Feller et al., 2013; Un et al., 2010; Wu, 2012). This is because, through collaboration, organizations improve access not only to resources but also to knowledge and new ideas —all of which relate to increasing innovation (Greer and Lei, 2012). Thus, we propose:

Hypothesis 3: Government activism intensifies the positive association between the pursuit of social goals and the engagement of entrepreneurs in innovative activities: (a) product innovation (b) process innovation.

Hypothesis 4: Government activism intensifies the positive association between the pursuit of environmental goals and the engagement of entrepreneurs in innovative activities: (a) product innovation (b) process innovation.

3.2.4.2 Informal cognitive institution - Postmaterialism culture values (PM)

Cultural values represent shared aspirations or ideals of how people in the society should behave (Stephan and Pathak, 2016; Stephan and Uhlaner, 2010). As values are seen to be a type of character trait, cultural values reflect the aggregate of personally important goals that a country's people hold (Schwartz, 2006). Cultural values influence entrepreneurial activities through the "aggregate traits approach" (Davidsson, 1995; Davidsson and Wiklund, 1997). According to the aggregate trait perspective, the more people in a country who hold values consistent with certain entrepreneurial

activities, the more the number of people will be motivated to engage in these entrepreneurial activities (Davidsson and Wiklund, 1997; Uhlaner and Thurik, 2007).

Postmaterialism cultural values (or postmaterialism) refer to the degree to which a society favours immaterial life goals over materialistic ones (Inglehart, 1997). Priorities in post-materialist societies shift from an emphasis on economic and physical security toward an increased emphasis on non-material goals such as autonomy, self-expression, subjective well-being, and quality-of-life concerns (Inglehart, 1997).

PM societies give high priorities to self-expression values, which are associated with personal advancement and growth. Thereby, the large number of people in PM societies value opportunities for advancement and such individuals are more likely to be imaginative and would engage in creative activities (Inglehart and Oyserman, 2004). Furthermore, as reflected by Joseph Schumpeter's views, freedom to think and act independently is expected to nurture the creativity of entrepreneurs making them more innovative (Shane, 1993). Thus, those who are self-reliant and freethinking, are more inclined to innovate and engage in innovative activities (Erumban and Jong, 2006). Taken together, individuals who value self-expression and autonomy, a joint preference encapsulated by PM, will be more attracted to innovative activities. Thus, if a country has more individuals who value PM, according to the aggregate trait perspective, we expect that individuals in such context indulge in innovation and tend to engage in innovative activities.

Building on this logic, we expect that innovative activities of socially and environmentally oriented entrepreneurs are likely to be promoted in societies with a high-level PM. On one hand, as said above, innovation is compatible with the cultural values of PM. In such context, socially and environmentally oriented entrepreneurs may perceive a high value of innovation if everyone around them values innovation. In turn that stimulates socially and environmentally oriented entrepreneurs to more engage in innovative activities. On the other hand, as social and environmental entrepreneurship aligns with the cultural values of PM, societies may give cues to favour socially and environmentally oriented activities. The outcome is that supportive and subsidiary activities for innovative activities might become available in these societies such as coaching and training courses, mentoring groups,

consultation, networking. Taking advantage of such available supports in PM societies allows socially and environmentally oriented entrepreneurs not only to gain access to resources but also to acquire knowledge and develop their capabilities, increase their innovation. Consequently, the following hypotheses can be derived:

Hypothesis 5: Postmaterialism cultural values intensify the positive association between the pursuit of social goals and the engagement of entrepreneurs in innovative activities: (a) product innovation (b) process innovation.

Hypothesis 6: Postmaterialism cultural values intensify the positive association between the pursuit of environmental goals and the engagement of entrepreneurs in innovative activities: (a) product innovation (b) process innovation.

3.2.4.3 Informal normative institutions - Socially supportive culture (SSC)

Cultural descriptive norms represent descriptive norms of typical behaviors of most people as actually enacted (Stephan and Pathak, 2016; Stephan and Uhlaner, 2010), which tacitly influence individuals' behavior within a culture (Fischer, 2006). Cultural descriptive norms offer individuals perceived patterns of common behaviours, institutional practices, proscriptions and prescriptions in a certain society (House et al., 2004). Individuals are likely to conform (more or less consciously) to these cultural descriptive norms by repeating typical behaviours which are common in their own society (Fischer, 2006).

Socially supportive culture (SSC) which features high orientation and low assertiveness, refer to a positive societal climate in which citizens tend to provide social support to each other (Stephan and Uhlaner, 2010). SSC is seen as one of the forms of weak-tie social capital (Stephan and Uhlaner, 2010), which is frequently considered as one of the important social supports for entrepreneurial activities (Adler and Kwon, 2002; Gedajlovic et al., 2013).

We suppose that SSC societies advance the engagement in innovative activities of both socially and environmentally oriented entrepreneurs for two reasons. First, SSC serves as a model of collaborative and cooperative behaviors, which allow socially and environmentally oriented entrepreneurs not only to gain access to and assemble resources but also to acquire knowledge and developing capabilities, in turn, stimulate their engagement in innovative activities. Innovation cannot be undertaken in isolation by a lone entrepreneur but is reliant on cooperation with a range of stakeholders (e.g., customers, suppliers, distributors, community, government, and other organizations). Thus, building supportive networking is particularly important for innovative activities. Indeed, the review of entrepreneurship literature demonstrates the significant role of networking in shaping innovative activities, in general (Dziallas and Blind, 2019) and socially and environmentally oriented innovations, in specific (see the reviews: Gast et al., 2017; Phillips et al., 2015).

In line with the previous research (Pathak and Muralidharan, 2016; Stephan et al., 2015), the pursuit of social and environmental goals might be considered as a legitimate behavior in SSC contexts. This is because the pursuit of social and environmental goals provides positive signals about the concerns with the surrounding world rather than self-interest among members in the society, which is congruent with the societal norms of SSC contexts. Thereby, as socially and environmentally oriented entrepreneurs conform to SSC norms, they will be seen as legitimate by crucial stakeholders (e.g, customers, suppliers, distributors, community, government and other organizations) and thus they will find it easier to access important resources (both tangible and intangible resources). Concomitantly, in SSC societies, socially and environmentally oriented entrepreneurs are facilitated to access the appropriate source of external knowledge, as well as acquire a better understanding of the knowledge from partners through intensive interaction. This will augment socially and environmentally oriented entrepreneurs' capacity and their incentive to engage in innovative activities.

Second, SSC may serve as the source of strength to enhance the self-efficacy of socially and environmentally oriented entrepreneurs in engaging in innovative activities. Innovation always involves risk exposure, since it requires venturing into the numerous uncertainties (Hall et al., 2011). Innovative activities regarding social and environmental goals are even riskier due to the complexity and unpredictability of social and environmental issues (Renko, 2013). SSC societies shape a climate of great tolerance for mistakes and failures (Stephan and Uhlaner, 2010). As socially and environmentally oriented entrepreneurs suffer fewer negative consequences from failure, they feel safer to try out innovative activities without fear of failure. Taken together, we argue that entrepreneurs pursuing social and environmental goals are more likely to engage the product or process innovation where SSC is high. Thus, we propose:

Hypothesis 7: Socially supportive culture intensifies the positive association between the pursuit of social goals and the engagement of entrepreneurs in innovative activities: (a) product innovation (b) process innovation.

Hypothesis 8: Socially supportive culture intensifies the positive association between the pursuit of environmental goals and the engagement of entrepreneurs in innovative activities: (a) product innovation (b) process innovation.

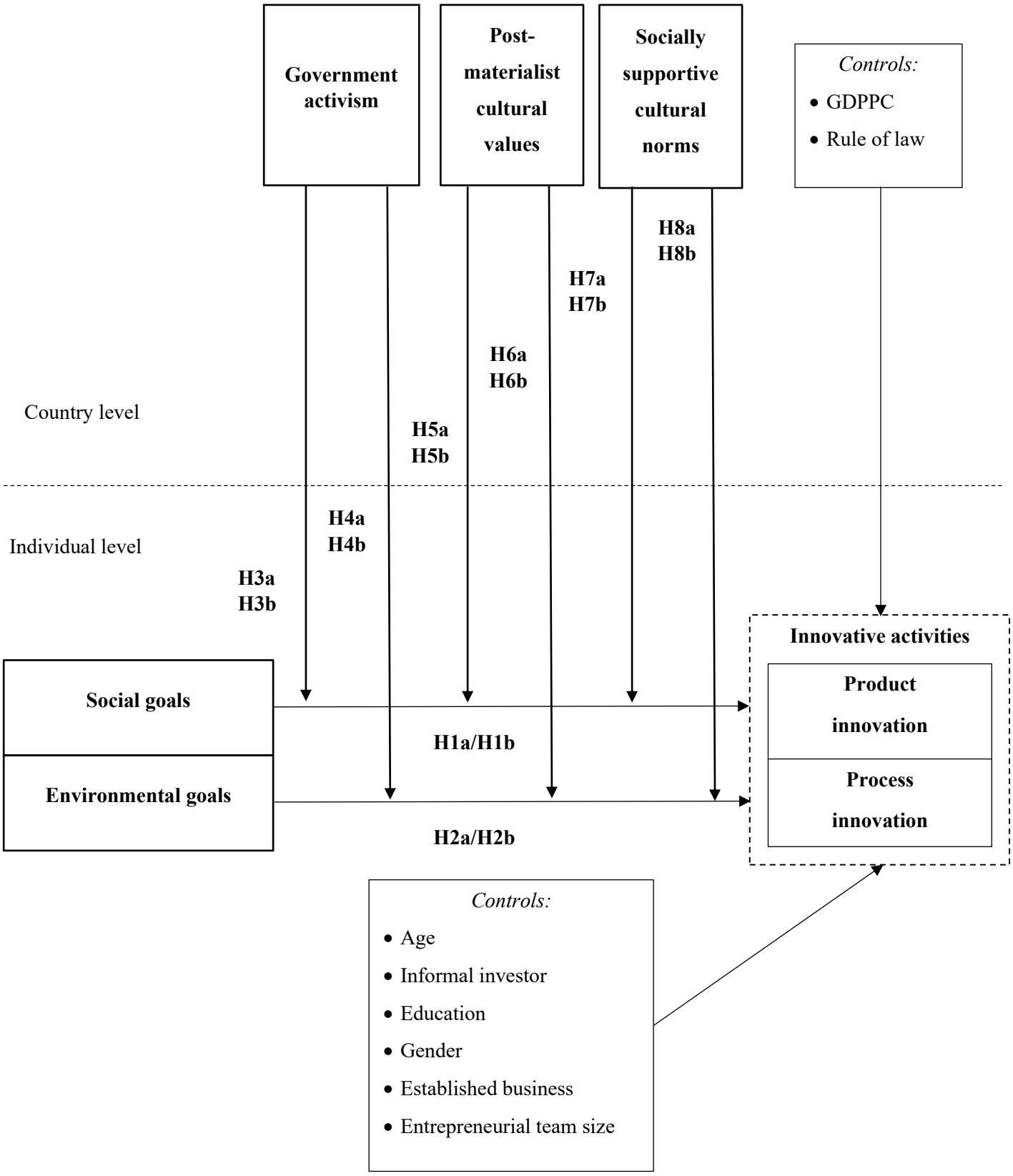


Figure 3.1 Research model of chapter 3

3.3 Methodology

3.3.1 Sample and data

Global Entrepreneurship Monitor (GEM) provides a leading dataset for comparative research on entrepreneurship (Reynolds et al., 2005). Therefore, the main data source for our analysis is derived from "Global Entrepreneurship Monitor's Adult Population Survey" (GEM APS) data of 2009 with over 150,000 individuals in over 50 countries (see Lepoutre et al., 2013 for the detailed description). In this research, the study only analyses the innovation of new ventures, we focus on young entrepreneurs are those who are currently operating new businesses for less than 42 months (3.5 years). As innovative activities refer to organizations already in existence, this proxy serves well the purpose of our study. Moreover, as nascent entrepreneurs are those who are currently in the process of starting a new firm, they may find it difficult to respond to questions concerning actual innovative activities. We also incorporate data from various sources: World Values Survey (WVS), GLOBE and Polity IV Indicator and World Bank. The final dataset for our main analyses comprises information on 2,895 young entrepreneurs embedded in 26 nations.

3.3.2 Dependent variables

While there are many different views on how to measure innovation (e.g., Community Innovation Survey (CSI), GEM survey), this chapter, following previous studies (Estrin et al. 2019; Hoogendoorn et al., 2020; Schøtt and Jensen, 2016), measures innovation through three questions related to innovative activities in GEM 2009. In GEM 2009, the entrepreneur is asked about the novelty of the product or service to potential customers, about the number of competitors in the same market and about how long the technology used is in existence. We use these questions to build the measure of the introduction of innovative activities of young entrepreneurs. Table 3.2 lists these questions and answer categories. In this study, innovation is broadly conceived to encompass both process innovation (the newness of the technology or procedure used in producing goods or services) and product innovation (the newness of the product or service to customers, and uniqueness among producers as well). Thus, we include two indicators reflecting two different innovative activities: product innovation and process innovation.

Table 3.2 Survey questions on Innovative activity

Survey questions (GEM)	Answer categories
(Product) – Will all, some, or none of your potential customers consider this product or service new and unfamiliar?	P1. All P2. Some P3. None
(Market) – Right now, are there many, few, or no other businesses offering the same products or services to your potential customers?	M1. Many business competitors M2. Few business competitors M3. No business competitors
(Process) – Have the technologies or procedures required for this product or service been available for less than a year, or between one to five years, or longer than five years?	T1. Less than a year T2. Between one to five years T3. Longer than five years

3.3.2.1 Product innovation

Table 3.3 Definition of Product innovation

Type	Definition
Product innovation	If the respondent reported that: (1) his/her product is new to all or to most customers (P1/P2) (2) few or no businesses offer the same product (M2/M3)
No product innovation	Every other combination

Product innovation is calculated as the percentage of innovative activities that requires creating a new product or service in a completely new market that previously did not exist (Koellinger, 2008). Therefore, we define the different types of product innovative activity in Table 3.3 based on responses to the two questions related to Product and Market in Table 3.2. Product innovation is a dummy variable, the value 1 for Product innovation and 0 otherwise.

Figure 3.2 The product innovation

			Product: Will all, some, or none of your potential customers consider this product or service new and unfamiliar?		
			P1	**P2**	**P3**
Market: Right now, are there many, few, or no other businesses offering the same products or services to your potential customers?			**All**	**Some**	**None**
	M1	**Many**	No	No	No
	M2	**Few**	Product innovation	Product innovation	No
	M3	**No**	Product innovation	Product innovation	No

3.3.2.2 Process innovation

Table 3.4 shows the definitions of the different types of process innovative activity based on responses to the question in Table 3.2. Process innovation is a dummy variable that takes the value 1 for Process innovation and 0 otherwise. As the research focuses on young entrepreneurs who own new business which has run for less than 42 months (3.5 years), the technologies or procedures required for their product or service which have been available from one to five years or longer than five years are not considered as innovative ones.

Table 3.4 Definition of Process innovation

Type	Definition
Process innovation	If the respondent reported that the technologies or procedures required for this product or service have been available for less than a year (T1)
No process innovation	If the respondent reported that the technologies or procedures required for this product or service have been available between one to five years (T2) or longer than five years (T3)

3.3.3 Individual-level (level 1) predictors: The pursuit of social and environmental goals

We use the score of points allocated for social goals and environmental goals as two individual-level independent variables which are collected from the following survey question:

"Organizations may have goals according to the ability to generate economic value, societal value, and environmental value. Please allocate a total of 100 points across these three categories as it pertains to your [venture's] goals.

How many points for economic value?

And how many points for societal value?

And, finally, how many points for environmental value?"

We acknowledge that respondents can have multiple value creation goals, and respondents' three potential value creation goals must sum to 100. We use the score of points that the respondent allocated for social goals as the first individual-level independent variable, which implies that the higher the score, the stronger the pursuit of social goals. Similarly, we use the score of points that the respondent allocated for environmental goals as the second individual-level independent variable, accordingly, the higher the score, the stronger the pursuit of environmental goals.

3.3.4 Country-level (level 2) predictors

3.3.4.1 Government activism

In this study, following previous studies (Aidis et al., 2012; Stephan et al., 2015), we use the version of government activism which is based on mean country scores for "fiscal freedom" and "government size", two sub-indicators available from the Heritage Foundation. "Index of Economic Freedom" (Beach and Kane, 2008; Heritage Foundation, 2010) (Cronbach's $\alpha = 0.72$ for our 26-country sample). We use the information on government activism for 2008, with higher values reflecting more taxation and spending, and thus higher government activism.

3.3.4.2 Postmaterialism cultural values

Previous literature shows a consensus that postmaterialism cultural values influence negatively on commercial entrepreneurship but positively on social entrepreneurship (Morales and Holtschlag, 2013; Stephan et al., 2015; Uhlaner and Thurik, 2007). Post-materialism cultural values are measured through the 4-item version of the postmaterialism index (Inglehart, 1997), which stems from World Values Surveys (WVS, 2010). This study uses data computed by the average rate across the World Values Survey Wave 4 (1999 – 2004) and Wave 5 (2005 – 2009). A strong positive correlation between the two waves ($r = 0.86$, $p<0.001$) shows the stability of postmaterialism in both periods. The postmaterialism score presenting in Table 2.1 shows that the percentage of citizens in the sample of each country that is scored as postmaterialists.

3.3.4.3 Socially supportive culture

SSC is one of two second-order cultural factors developed by Stephan and Uhlaner (2010) from the cultural descriptive norms of GLOBE (House et al., 2004). SSC is a dimension (scale) that includes positive humane orientation and negative assertiveness. SSC can take on different values, ranging from higher to lower values. Higher values on SSC indicate a more supportive culture characterised by greater ease of contact, a positive interpersonal climate, and norms of cooperation.

3.3.5 Individual-level controls

3.3.5.1 Age

Age is known as a common factor in explaining innovative activities (Ahlin et al., 2014; Baron and Tang, 2011; Hoogendoorn et al., 2020; Schøtt and Jensen, 2016). Hence, we control for individuals' age and age in a quadratic form to capture any curvilinear effects.

3.3.5.2 Informal investor in the past 3 years

The individual experience of being an informal investor is likely to impact innovation aspirations. The importance of the individual experience of being an informal investor for socially oriented entrepreneurial activities is emphasized in previous research (Meyskens et al., 2010). It is measured through an indicator from GEM is an informal investor in the past 3 years. Hence, we control for the informal investor in the past 3 years (1 = informal investor in the past 3 years and 0 = Otherwise).

3.3.5.3 Established business

Entrepreneurial experience may be important for the firm's level of innovativeness (Cliff, Jennings and Greenwood, 2006). Accordingly, owning an existing business may raise an entrepreneur's self-efficacy due to their previous entrepreneurial experience and thus may affect the decision to engage in innovative activities in their business. Therefore, we use established business as a control variable (1= Respondent has an existing business; 0=otherwise).

3.3.5.4 Education

Past studies find that education positively influences innovation activities (Koellinger, 2008; Schøtt and Jensen, 2016). Moreover, compared to commercial entrepreneurship, the more highly educated individuals are more likely to enter socially and environmentally oriented entrepreneurship (Estrin et al., 2013). Thus, this study controls for the tertiary education level (1= respondent has a tertiary education; 0=otherwise).

3.3.5.5 Gender

Gender is commonly taken into account when studying innovative activities (Ahlin et al., 2014; Baron and Tang, 2011; Hoogendoorn et al., 2020; Schøtt and Jensen, 2016). There is a difference between male and female entrepreneurs in social and environmental entrepreneurship (Brieger et al., 2019; Estrin et al., 2013; Hörisch et al., 2017). Therefore, this study includes a dummy variable for gender (1=Female and 0=Male) as control variables.

3.3.5.6 Entrepreneurial team size

The engagement in innovative activities may be affected by the size of an entrepreneurial team (Schøtt and Jensen, 2016; Schøtt and Sedaghat, 2014). Due to the skewness, analyses for this variable are transformed logarithmically. Therefore, this study uses the logarithm of entrepreneurial team size as a control variable.

3.3.6 Country-level controls

3.3.6.1 Economic development - GDPPC

Social and environmental entrepreneurship is known to vary with a country's level of economic development (Brieger and De Clercq, 2019; Hechavarria et al., 2015). Following previous studies on innovation (Hoogendoorn et al., 2020; Koellinger, 2008), we include 2008 GDPPC (gross domestic product per capita) at purchasing power parity USD obtained from the World Bank as a control variable for the size of the economy.

3.3.6.2 Rule of law

We also control for a rule of law (in 2008) from the Polity IV Indicator database of efficient constraints on the arbitrary power of the executive branch of the government “Executive constraints”, which is found to influence social entrepreneurship in previous research (Estrin et al., 2013).

3.3.7 Data analysis

We test our hypotheses by using a series of multilevel regression models as our data contains individual-level observations grouped by country resulting in a hierarchical and clustered dataset. As we combine individual-level observations with country-level measures of cultural values and practices, applying multilevel analysis could allow us to avoid biases arising in single-level regressions. Specifically, whereas individual-level regressions increase the risk of Type 1 errors and biased standard errors as well as disregard the nature of culture as a collective concept, country-level regressions carry the risk of aggregation bias and ignore the nature of entrepreneurial activities as an individual behaviour (Hox et al., 2017; Peterson et al., 2012).

The Intraclass Correlation (ICC), the proportion of total variance that is contributed by country-level variance components as frequently used in cross-cultural research, estimate how much of the variance in the dependent variables resided between countries (Hox et al., 2017). Significant between-group variance in the dependent variables requires multilevel analysis (Peterson et al., 2012). To see whether this applies in our study, we test the significance of country effects (only random intercepts and without random slopes) by the null model with slopes and without any control variables. We find evidence for significant country-level variance (at $p < 0.001$) in addition to individual-level variance. The Intraclass Correlations (ICC) estimated yielded that 8% of the variation for product innovation and 12% of the variation for process innovation resides at the country level (compared to the individual level).

We also test the appropriateness of employing Random Slope Model vis-a-vis Random Intercept Model; the former allowing for both the intercept and slope of some variables to vary randomly across countries. More specifically, we test whether the pursuit of social and environmental goals is the same across countries by introducing random coefficients for these two variables. The LR test statistic comparing random intercept models and random slope models are significant at the 1% level, justifying the use of random slope models for both product and process innovation. This is further confirmed by the statistical significance of random slope coefficients for two individual-level variables: the pursuit of social and environmental goals.

Furthermore, Hypotheses 3 – 8 focus on moderation effects, which establish predictions about how the relationship between the pursuit of social and environmental goals and innovative activities (lower-level variables in our multi-level models) change as a function of higher-order moderator variables (Aguinis et al., 2013). Interaction terms are added to the model specifications to test for such cross-level moderation effects; two random slopes for social and environmental goals are included to properly model the cross-level interactions (Heisig and Schaeffer, 2019).

Taken together, to explain how the pursuit of social versus environmental goals and cultural contexts affect the engagement of entrepreneurs in innovative activities, we use multivariate multilevel logistic modelling. More specifically, in our multilevel model, we allow both intercept and slopes to vary randomly across countries to account for the variance in the dependent variable. Throughout Model 2 - 8 in Table 3.10, random effects refer to both random intercepts and random slopes. Our models account for potential variance in the relationship between individual-level predictors and outcomes across national contexts (Bickel, 2007; Hofmann et al., 2000). This statistical approach is compatible with that used in prior multilevel entrepreneurship research (De Clercq et al., 2011; Wennberg et al., 2013; Block et al., 2019).

Both centring and standardization have the same advantages: interpreting more easily, creating meaningful value for the intercept as well as reaching convergence faster. However, standardization is less preferred due to its effects in the interpretation of the regression slopes and the residual variances. Moreover, centring produces more realistic and stable variance estimates (Hox et al., 2017). Additionally, among the two main rescaling approaches, group-mean centering is the more recommended method in research encompassing cross-level interaction effects (Aguinis et al., 2013). Applying grand-mean centering may create less accurate results, or even a lack of meaningful interpretation for the cross-level interaction effect (Enders and Tofighi, 2007), whereas group-mean centering leads to the most accurate estimates of within-group slopes and minimizes the possibility of finding spurious cross-level interaction effects (Hofmann and Gavin, 1998). Therefore, in our paper, country-level conditions are centered and each individual-level variable is centered within each country. We used the variance inflation factor (VIF) to test for multicollinearity displayed in Table 3.9. All VIF

scores are below 5.0 suggested that no multicollinearity is present among our country-level predictor variables (Hair et al., 1998).

To test the influence of both country-level and individual-level predictors as well as their interaction effects on noneconomic goals among young entrepreneurs, we proceed with an eight-step estimation strategy. First, we test the model with only level 1 predictors (product and process innovation) as random slopes (Model 1 of Table 3.10). Second, we add individual-level controls (Model 2 of Table 3.10) and country-level controls (Model 3 of Table 3.10). Then, in the main models, we add three institutional predictors (GA, PM and SSC) (Model 4 of Table 3.10). Finally, we introduce each interaction term individually: GA * Social goals and GA * Environmental goals (Model 5 of Table 3.10); PM * Social goals and PM * Environmental goals (Model 6 of Table 3.10); SSC * Social goals and SSC * Environmental goals (Model 7 of Table 3.10) and include all interactions (Model 8 of Table 3.10). For each model, along with estimates for the fixed part (estimates of coefficients) and random part (variance estimates), we also report model fit statistics: (1) the change-in-deviance or likelihood ratio test (to test whether the model is a significant improvement over the previous model); (2) the change in Pseudo R^2 or the change in the proportion of country-level variance explained by a model relative to its preceding model (to examine the effect size for the predictors added at each step).

3.4 Results

Table 3.5 shows the average values of the main variables of interest in this study for each country in our sample. Table 3.6 provides the descriptive statistics for all variables (controls, predictors and dependent variables) in this research. Table 3.7 and Table 3.8 display correlation matrices for the individual and country-level variables. Table 3.9 reports the Variance Inflation Factor (VIF) scores and Tolerance values on the controls and predictors. Table 3.10 shows the effects of the interplay of entrepreneurs' pursuit of social and environmental goals and institutional factors on the probabilities of the engagement of entrepreneurs in innovative activities.

Table 3.5 Country-level descriptive statistics

Country	Product innovation	Process innovation	Social goals	Environmental goals	Age	Informal investor	Tertiary education	Female entrepreneur	Established business	Entrepreneurial team size (log)	GA	PM	SSC	Rule of law	GDPPC
Argentina	35%	4%	24	17	39	7%	31%	46%	2%	0.33	24	20	4	6	18437
Brazil	8%	23%	7	8	35	2%	14%	52%	0%	0.13	38	11	4	6	13803
China	23%	11%	27	15	36	12%	20%	48%	1%	0.24	22	4	4	3	7948
Colombia	28%	11%	20	16	40	11%	35%	41%	1%	0.48	28	19	4	6	10547
Denmark	45%	5%	32	16	45	8%	45%	45%	0%	0.37	73	16	4	7	45866
Finland	17%	11%	21	15	38	13%	49%	40%	0%	0.57	53	11	4	7	42575
France	43%	43%	23	21	37	14%	86%	43%	0%	0.33	67	18	4	6	37618
Germany	24%	7%	19	11	41	12%	67%	32%	5%	0.33	54	16	3	7	40989
Greece	29%	5%	22	18	37	8%	52%	35%	0%	0.24	38	17	3	7	31882
Guatemala	38%	8%	18	19	34	16%	2%	44%	5%	0.24	12	8	4	6	6782
Hungary	8%	2%	7	6	42	17%	55%	27%	0%	0.28	52	2	3	7	23734
Iran	39%	13%	25	17	29	26%	52%	26%	4%	0.57	17	10	4	2	17187
Israel	24%	16%	18	8	35	13%	58%	37%	0%	0.46	54	13	4	7	29082
Italy	27%	4%	32	16	38	9%	22%	22%	0%	0.39	58	24	4	7	37954
Korea	21%	4%	23	16	40	11%	63%	17%	0%	0.17	26	4	4	6	28588
Malaysia	13%	17%	28	20	40	4%	57%	22%	0%	0.27	18	7	4	5	20687
Morocco	7%	10%	36	6	34	2%	5%	30%	0%	0.21	31	7	4	3	6107
Netherlands	30%	4%	33	13	43	7%	7%	43%	3%	0.31	55	20	4	7	47134
Russia	7%	0%	4	13	33	13%	87%	33%	0%	0.39	26	2	4	4	24006
Slovenia	30%	13%	31	23	37	13%	40%	25%	2%	0.27	52	16	4	7	31138

South Africa	31%	27%	29	26	36	20%	25%	43%	0%	0.47	27	8	4	7	11990
Spain	17%	12%	23	16	39	13%	53%	38%	1%	0.36	45	15	3	7	34164
Switzerland	29%	10%	21	11	43	12%	43%	45%	0%	0.41	35	24	4	7	56756
United Kingdom	24%	4%	27	20	44	4%	53%	37%	1%	0.33	49	24	4	7	37903
United States	15%	1%	21	14	46	16%	76%	36%	1%	0.44	36	22	4	7	50384
Venezuela	18%	16%	21	16	35	0%	25%	61%	0%	0.49	23	14	4	4	17897

N = 2,895 observations, n = 26 countries

Product innovation (%) is the percentage of respondents who engage in product innovation per country, is coded Product innovation = 1 and Otherwise = 0

Process innovation (%) is the percentage of respondents who engage in process innovation per country, is coded Process innovation = 1 and Otherwise = 0

Social goals represent the average point the respondents allocated for the pursuit of social goals per country

Environmental goals represent the average point that respondents allocated for the pursuit of environmental goals per country

Age represents the average age of respondents per country

Informal investor (%) is the percentage of respondents who are Informal investors in last 3 year per country, is coded Yes = 1 and No = 0

Tertiary education (%) is the percentage of respondents who have complete secondary or higher education per country, is coded Yes = 1 and No = 0

Female entrepreneurs (%) are the percentage of Female entrepreneurs per country, is coded Female entrepreneurs = 1 and Male entrepreneurs = 0

Established business (%) the percentage of respondents who are owning an existing business per country, is coded Yes = 1 and No = 0

Entrepreneurial team size (log) represents the average logarithm of the number of business owners per country

Table 3.6 Descriptive statistics

Level 1 variables	Mean	SD	Min	Max
Product innovation	0.219	0.414	0	1
Process innovation	0.097	0.297	0	1
Social goals	23.282	18.547	0	100
Environmental goals	15.129	15.071	0	100
Age	38.968	11.137	18	79
Informal investor in last 3 years	0.097	0.297	0	1
Tertiary education	0.402	0.49	0	1
Female entrepreneur	0.391	0.488	0	1
Established business	0.01	0.1	0	1
Entrepreneurial team size (log)	0.326	0.537	0	5.298

N = 2,895 observations

Level 2 variables	Mean	SD	Min	Max
Government activism	38.983	16.454	12.124	72.586
Postmaterialism values	13.419	6.869	1.8	24.3
Socially supportive culture	3.848	0.285	3.325	4.495
Rule of law	5.962	1.509	2	7
GDP per capita	28121.48	14477.92	6106.845	56755.84

n = 26 countries

Table 3.7 Individual-level correlations

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) Age	1									
(2) Informal investor in last 3 years	0.003	1								
(3) Tertiary education	0.050**	0.056**	1							
(4) Female entrepreneur	-0.016	-0.041*	-0.062***	1						
(5) Established business	0.016	0.072***	0.017	-0.031+	1					
(6) Entrepreneurial team size (log)	0.035+	0.107***	0.057**	-0.083***	0.046*	1				
(7) Social goals	0.004	0.038*	0.015	0.058**	0.009	0.014	1			
(8) Environmental goals	0.039*	0.040*	0.024	-0.019	0	0.100***	0.134***	1		
(9) Product innovation	0.001	0.045*	0.062***	0.025	0.056**	0.085***	0.078***	0.111***	1	
(10) Process innovation	-0.083***	0.026	-0.013	0.026	0.049**	-0.005	0	0.007	0.071***	1

N = 2,895 observations

**** p<0.001, ** p<0.01, * p<0.05, + p<0.1*

Table 3.8 Country-level correlations

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Government activism	1								
(2) Postmaterialism values	0.429*	1							
(3) Socially supportive culture	-0.338+	-0.275	1						
(4) Rule of law	0.609***	0.499**	-0.468+	1					
(5) GDP per capita	0.665***	0.623***	-0.267	0.612***	1				
(6) Social goals	0.144	0.333	0.289	-0.024	0.118	1			
(7) Environmental goals	-0.13	0.169	0.25	0.107	-0.04	0.417*	1		
(8) Product innovation[a]	0.199	0.410*	0.072	0.164	0.176	0.414*	0.563**	1	
(9) Process innovation[b]	0.074	-0.048	0.057	-0.097	-0.214	0.062	0.331	0.233	1

[a] Product innovation based on 2,895 observations

[b] Product innovation based on 2,895 observations

n = 26 countries

**** p<0.001, ** p<0.01, * p<0.05, + p<0.1*

Table 3.9 Multicollinearity test

Product innovation (dependent variable)	VIF[a]	Tolerance[b]
Social goals	1.026	0.975
Environmental goals	1.021	0.979
Age	1.165	0.858
Age squared	1.159	0.863
Informal investor in last 3 years	1.029	0.972
Tertiary education	1.115	0.897
Female entrepreneur	1.027	0.974
Established business	1.01	0.99
Entrepreneurial team size (log)	1.028	0.973
Government activism	4.051	0.247
Postmaterialism values	3.643	0.274
Socially supportive culture	2.684	0.373
Rule of law	2.122	0.471
GDP per capita	2.013	0.497
Mean VIF	1.721	.

[a]VIF (Variance Inflation Factors) values greater than 5 signal high collinearity and values greater than 10 indicates reasons for concern due to collinearity among variables. Our variables do not suffer collinearity.

[b]Tolerance values less than 0.1 indicate collinearity among variables. Our variables do not suffer collinearity.

N = 2,895 observations

Process innovation (dependent variable)	VIF[a]	Tolerance[b]
Social goals	1.026	0.975
Environmental goals	1.021	0.979
Age	1.165	0.858
Age squared	1.159	0.863
Informal investor in last 3 years	1.029	0.972
Tertiary education	1.115	0.897
Female entrepreneur	1.027	0.974
Established business	1.01	0.99
Entrepreneurial team size (log)	1.028	0.973
Government activism	4.051	0.247
Postmaterialism values	3.643	0.274
Socially supportive culture	2.684	0.373
Rule of law	2.122	0.471
GDP per capita	2.013	0.497
Mean VIF	1.721	.

[a]VIF (Variance Inflation Factors) values greater than 5 signal high collinearity and values greater than 10 indicates reasons for concern due to collinearity among variables. Our variables do not suffer collinearity.

[b]Tolerance values less than 0.1 indicate collinearity among variables. Our variables do not suffer collinearity.

N = 2,895 observations

Table 3.10 Effects on the engagement of entrepreneurs in innovative activities

	Null model				Level 1 controls				Level 2 controls				Main models			
	Model 1				Model 2				Model 3				Model 4			
	Model 1.1		Model 1.2		Model 2.1		Model 2.2		Model 3.1		Model 3.2		Model 4.1		Model 4.2	
	Product		Process		Product		Process		Product		Process		Product		Process	
Fixed effects																
Constant	0.28***	(0.03)	0.09***	(0.01)	0.23***	(0.03)	0.07***	(0.01)	0.22***	(0.03)	0.06***	(0.01)	0.21***	(0.03)	0.06***	(0.01)
Individual-level predictors																
Social goals	1.01*	(0.00)	1.01+	(0.00)	1.01*	(0.00)	1.01	(0.00)	1.01*	(0.00)	1.01+	(0.00)	1.01*	(0.00)	1.01	(0.00)
Environmental goals	1.01***	(0.00)	0.99	(0.01)	1.01***	(0.00)	0.99	(0.01)	1.01***	(0.00)	0.99	(0.01)	1.01***	(0.00)	0.99	(0.01)
Individual-level controls																
Age					0.99	(0.00)	0.99*	(0.01)	0.99	(0.00)	0.98*	(0.01)	1.00	(0.00)	0.98*	(0.01)
Age squared					1.00	(0.00)	1.00	(0.00)	1.00	(0.00)	1.00	(0.00)	1.00	(0.00)	1.00	(0.00)
Informal investor in last 3 years					1.21	(0.18)	1.24	(0.26)	1.21	(0.18)	1.24	(0.26)	1.23	(0.18)	1.24	(0.26)
Tertiary education					1.37**	(0.14)	1.09	(0.16)	1.37**	(0.14)	1.12	(0.16)	1.38**	(0.14)	1.13	(0.16)
Female entrepreneur					1.15	(0.11)	1.11	(0.15)	1.15	(0.11)	1.12	(0.15)	1.14	(0.11)	1.12	(0.15)
Established business					2.33*	(0.92)	3.77**	(1.81)	2.34*	(0.93)	3.73**	(1.78)	2.37*	(0.94)	3.78**	(1.81)
Entrepreneurial team size (log)					1.31***	(0.11)	0.96	(0.13)	1.32***	(0.11)	0.96	(0.13)	1.31**	(0.11)	0.96	(0.13)
Country-level predictors																
Government activism (GA)													1.00	(0.01)	1.02	(0.01)
Postmaterialism values (PM)													1.05*	(0.02)	1.00	(0.03)
Socially supportive culture (SSC)													2.40*	(1.06)	1.62	(1.00)

Country-level controls																
Rule of law									1.09	(0.12)	1.05	(0.14)	1.15	(0.13)	1.05	(0.15)
GDPPC									1.00	(0.00)	1.00*	(0.00)	1.00	(0.00)	1.00*	(0.00)
Random effects																
Country-level variance	0.30	(0.12)	0.49	(0.21)	0.29	(0.12)	0.55	(0.24)	0.28	(0.11)	0.34	(0.17)	0.18	(0.08)	0.31	(0.16)
ICC	0.08	(0.03)	0.13	(0.05)	0.08	(0.03)	0.14	(0.05)	0.08	(0.03)	0.09	(0.04)	0.05	(0.02)	0.09	(0.04)
Model fit																
Degrees of freedom (df)	2		2		9		9		11		11		14		14	
LR test (from Model without random slopes)	7.63 (1)		19.65 (1)													
Prob > Chi2	0.00		0.00													
Pseudo R2 from Model 1					0.03		-0.12		0.07		0.12					
LR test (from Model 1)					32.01 (7)		16.48 (7)		33.03 (10)		22.99 (9)					
Prob > Chi2					0.00		0.02		0.00		0.01					
Pseudo R2 from Model 2									3.45		38.18					
LR test (from Model 2)									1.02 (2)		6.51 (2)					
Prob > Chi2									0.06		0.04					
Pseudo R2 from Model 3													0.36		0.09	
LR test (from Model 3)													7.25 (3)		1.94 (3)	
Prob > Chi2													0.06		0.59	
AIC	2968		1804		2950		1787		2953		1784		2952		1782	
Deviance	-1479		-898.1		-1463		-888.3		-1462		-880.1		-1459		-876.8	

Table 3.10 *continued*

	Cross-level interactions															
	Model 5				Model 6				Model 7				Model 8			
	Model 5.1		Model 5.2		Model 6.1		Model 6.2		Model 7.1		Model 7.2		Model 8.1		Model 8.2	
	Product		Process		Product		Process		Product		Process		Product		Process	
Fixed effects																
Constant	0.21***	(0.03)	0.06***	(0.01)	0.21***	(0.03)	0.06***	(0.01)	0.21***	(0.03)	0.06***	(0.01)	0.21***	(0.03)	0.06***	(0.01)
Individual-level predictors																
Social goals	1.01+	(0.00)	1.01	(0.00)	1.00	(0.00)	1.01+	(0.00)	1.01	(0.00)	1.01	(0.00)	1.00	(0.00)	1.01	(0.00)
Environmental goals	1.01***	(0.00)	0.99	(0.01)	1.01***	(0.00)	0.99	(0.01)	1.01***	(0.00)	0.99	(0.01)	1.01***	(0.00)	0.99	(0.01)
Individual-level controls																
Age	1.00	(0.00)	0.98*	(0.01)	1.00	(0.00)	0.98*	(0.01)	1.00	(0.00)	0.98*	(0.01)	1.00	(0.00)	0.98*	(0.01)
Age squared	1.00	(0.00)	1.00	(0.00)	1.00	(0.00)	1.00	(0.00)	1.00	(0.00)	1.00	(0.00)	1.00	(0.00)	1.00	(0.00)
Informal investor in last 3 years	1.24	(0.19)	1.24	(0.26)	1.23	(0.18)	1.24	(0.26)	1.22	(0.18)	1.22	(0.26)	1.23	(0.18)	1.22	(0.26)
Tertiary education	1.37**	(0.14)	1.13	(0.16)	1.38**	(0.14)	1.13	(0.16)	1.38**	(0.14)	1.12	(0.16)	1.37**	(0.14)	1.13	(0.16)
Female entrepreneur	1.14	(0.11)	1.12	(0.15)	1.15	(0.11)	1.12	(0.15)	1.14	(0.11)	1.12	(0.15)	1.13	(0.11)	1.12	(0.15)
Established business	2.37*	(0.94)	3.78**	(1.81)	2.36*	(0.94)	3.79**	(1.82)	2.42*	(0.96)	3.82**	(1.83)	2.41*	(0.95)	3.85**	(1.85)
Entrepreneurial team size (log)	1.31***	(0.11)	0.96	(0.13)	1.32***	(0.11)	0.96	(0.13)	1.31**	(0.11)	0.96	(0.13)	1.31***	(0.11)	0.96	(0.13)
Country-level predictors																
Government activism (GA)	1.00	(0.01)	1.02	(0.01)	1.00	(0.01)	1.02	(0.01)	1.00	(0.01)	1.02	(0.01)	1.00	(0.01)	1.02	(0.01)
Postmaterialism values (PM)	1.04*	(0.02)	1.00	(0.03)	1.04*	(0.02)	1.00	(0.03)	1.05*	(0.02)	1.00	(0.03)	1.04*	(0.02)	1.00	(0.03)
Socially supportive culture (SSC)	2.43*	(1.05)	1.60	(1.00)	2.42*	(1.06)	1.62	(1.00)	2.49*	(1.09)	1.66	(1.03)	2.47*	(1.06)	1.64	(1.02)

Country-level controls																
Rule of law	1.16	(0.12)	1.05	(0.15)	1.16	(0.13)	1.05	(0.15)	1.16	(0.13)	1.05	(0.15)	1.17	(0.12)	1.05	(0.15)
GDPPC	1.00	(0.00)	1.00*	(0.00)	1.00	(0.00)	1.00*	(0.00)	1.00	(0.00)	1.00*	(0.00)	1.00	(0.00)	1.00*	(0.00)
Cross-level interactions																
GA*Social goals	1.001***	(0.00)	1.00	(0.00)									1.001*	(0.00)	1.00	(0.00)
GA*Environmental goals	1.00	(0.00)	1.00	(0.00)									1.00	(0.00)	1.00	(0.00)
PM*Social goals					1.001*	(0.00)	1.00	(0.00)					1.00	(0.00)	1.00	(0.00)
PM*Environmental goals					1.00	(0.00)	1.00	(0.00)					1.00	(0.00)	1.00	(0.00)
SSC*Social goals									0.97*	(0.01)	0.99	(0.01)	0.98	(0.01)	0.98	(0.02)
SSC*Environmental goals									1.01	(0.01)	0.99	(0.04)	1.01	(0.01)	0.99	(0.04)
Random effects																
Country-level variance	0.16	(0.07)	0.32	(0.16)	0.17	(0.08)	0.31	(0.16)	0.17	(0.08)	0.31	(0.16)	0.16	(0.07)	0.31	(0.16)
ICC	0.05	(0.02)	0.09	(0.04)	0.05	(0.02)	0.09	(0.04)	0.05	(0.02)	0.09	(0.04)	0.05	(0.02)	0.09	(0.04)
Model fit																
Degrees of freedom (df)	16		16		16		16		16		16		20		20	
Pseudo R2 from Model 4	0.11		-0.03		0.06		0.00		0.06		0.00		0.11		0.00	
LR test (from Model 4)	10.25 (2)		0.09 (2)		5.02 (2)		0.11 (2)		6.15 (2)		0.72 (2)		14.59 (6)		1.51 (6)	
Prob > Chi2	0.01		0.96		0.08		0.95		0.05		0.70		0.02		0.96	
AIC	2945		1790		2951		1790		2949		1789		2949		1796	
Deviance	-1454		-875.8		-1456		-875.8		-1456		-875.5		-1451		-875.1	

Standard errors in parentheses; *** p<0.001, ** p<0.01, * p<0.05, + p<0.10 (two-tailed) N = 2,895 observations, n = 26 countries
Estimates in Models 1 - 8 report odds ratio (OR). OR>1 represents a positive relationship whereas OR<1 represents a negative relationship.
Note: the first level variances are fixed at $\pi^2/3$ in the multilevel logistic models.

Hypotheses 1a – 1b: The pursuit of social goals and Innovative activities

Consistent with our expectation, as shown by the odds ratios in Model 3.1 of Table 3.10 the pursuit of social goals has statistically significant positive effects on both product innovation (OR=1.01, $p < 0.05$) and marginally significant on process innovation (OR=1.01, $p < 0.10$). These findings are in line with the predictions of Hypotheses 1a and 1b.

Hypotheses 2a – 2b: The pursuit of environmental goals and Innovative activities

The result in Model 3.2 of Table 3.10 provides statistically significant evidence on the positive effect of the pursuit of environmental goals (OR=1.01, $p < 0.001$) on the engagement of entrepreneurs in product innovation, but not in process innovation. These results show that Hypothesis 2a is supported but Hypothesis 2b is not supported.

Interactive effects of Government activism, Postmaterialism cultural values and Socially supportive culture

Model 5 – 8 in Table 3.10 add the interaction terms which test our hypotheses that institutional factors moderate the relationship between two individual-level predictors (the pursuit of social and environmental goals) and innovative activities (product and process innovation). To test the moderating effects, we first add the interaction of GA*Social goals and GA*Environmental goals in Model 5, then add the interaction of PM*Social goals and PM*Environmental goals in Model 6 prior to adding the interaction of SSC*Social goals and SSC*Environmental goals in Model 7. Finally, as the most stringent test of our hypotheses, we include all interactions in Model 8.

First, we analyse the result of the moderating effects of three institutional pillars (GA, PM and SSC) on the relationship between the pursuit of social goals and innovative activities (product and process innovation) (Hypotheses 3a – 3b, 5a – 5b and 7a – 7b). Then the result of the moderating effects of GA, PM and SSC on the link between the pursuit of environmental goals and innovative activities (product and process innovation) (Hypotheses 4a – 4b, 6a – 6b and 8a – 8b) is presented. To clarify the findings related to the moderation effects, we plot the significant interactions in Figures 3.3 – 3.5.

Hypotheses 3a – 3b: The moderating effects of Government activism on the relationship between The pursuit of social goals and Innovative activities

Compatible with our expectation, in Model 5.1 and 5.2 (Table 3.10), GA strengthens the positive impact of the pursuit of social goals on the engagement of entrepreneurs in product innovation (OR=1.001, $p < 0.001$) while there is no moderating effect of GA on the positive relationship between the pursuit of social goals and process innovation. This interaction effect is replicated when all interaction terms are entered together in the same model (Model 8.1 in Table 3.10). Hence, Hypothesis 3a is supported while Hypothesis 3b is not supported. Figure 3.3 shows that when GA increases from low to very high levels, the probability of the engagement of entrepreneurs in product innovation is further fostered among those who pursuing social goals. At a very low level, GA diminishes the likelihood to engage in product innovation of socially oriented entrepreneurs.

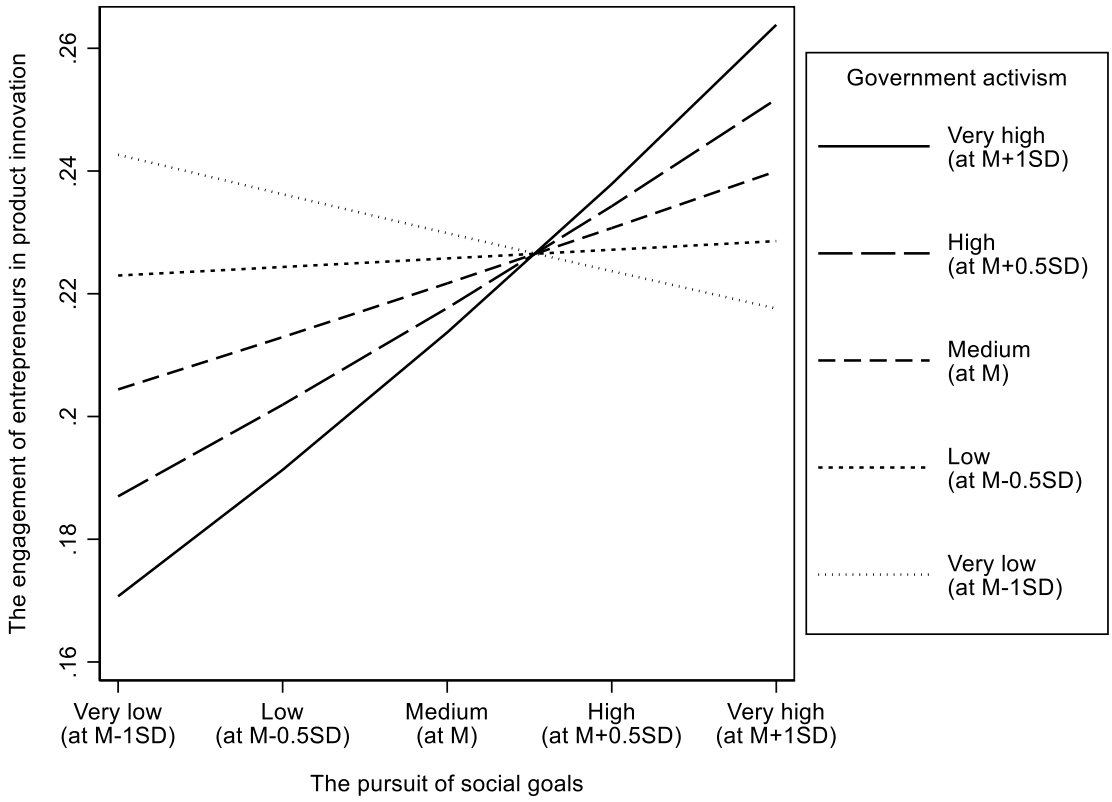


Figure 3.3 Interaction effect of the pursuit of social goals and government activism on the engagement of entrepreneurs in product innovation

Hypotheses 5a – 5b: The moderating effects of Postmaterialism cultural values on the relationship between The pursuit of social goals and Innovative activities

In line with our prediction and as shown in Model 6.1 (Table 3.10), PM reinforces the positive effect on the pursuit of social goals on the engagement of entrepreneurs in product innovation (OR=1.001, $p < 0.05$), but not in process innovation (Model 6.2, Table 3.10). However, when all interactions are added in Model 8.1 and 8.2 (Table 3.10), we no longer find the significantly positive effect of PM on the relationship between the pursuit of social goals and product innovation. This might be because testing so many interacting effects simultaneously as Model 8 need more than the current country-level sample where the number of countries represented is limited, only 26 countries. This leads to the statistical power of the analyses (i.e., cross-level interactions), which may be too low to identify all the expected effects. In sum, the results support Hypothesis 5a but do not support Hypothesis 5b.

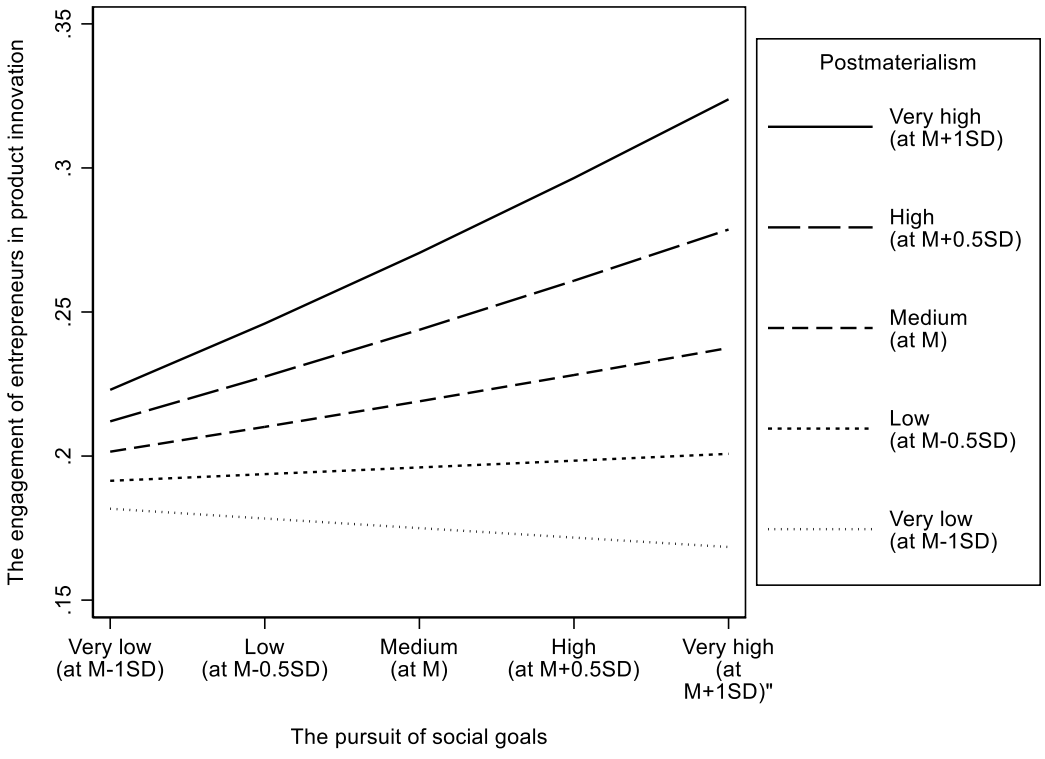


Figure 3.4 Interaction effect of the pursuit of social goals and postmaterialism cultural values on the engagement of entrepreneurs in product innovation

In Figure 3.4, we observe that when PM increases from medium to very high levels, the possibility of engagement in product innovation is further strengthened among socially oriented entrepreneurs. In contrast, low levels of PM may lessen the engagement of entrepreneurs in product innovation in their business.

Hypotheses 7a – 7b: The moderating effects of Socially supportive culture on the relationship between The pursuit of social goals and Innovative activities

In Model 7.1 and 7.2 (Table 3.10), we find a significant negative interaction effect of SSC and the pursuit of social goals on the engagement of entrepreneurs in product innovation (but not process innovation) in their business (OR=0.97, $p < 0.05$). Yet, when all interactions are added in Model 8.1 and 8.2 (Table 3.10), we no longer find the significantly negative effect of SSC on the relationship between the pursuit of social goals and product innovation. This might be because testing so many interacting effects simultaneously as Models 8.1 and 8.2 need more than the current country-level sample where the number of countries represented is limited, only 26 countries. This leads to the statistical power of the analyses (i.e., cross-level interactions), which may be too low to identify all the expected effects. In sum, it fails to support both Hypotheses 7a and 7b.

Figures 3.5 illustrates that at SSC from very low to medium levels, the stronger the social goals of entrepreneurs are, the higher the probability to engage in product innovation is. However, when SSC reaches a high level, the change in the propensity of engagement in product innovation increases by small increments. Notably, at very high levels, SSC does not moderate the effect of the pursuit of social goals on the engagement of entrepreneurs in product innovation.

In sum, the interaction qualifies the positive effect of the pursuit of social goals on the engagement of entrepreneurs in product innovation, it holds under low to medium levels but is weaker at a high level of SSC. This implies that low and medium levels of SSC may compensate for the propensity of the pursuit of social goals. Especially, at a strong level, SSC exerts a substitute effect on the relationship between social goals and product innovation. Substitute effect implies that when living

in cultures with strong socially supportive norms, entrepreneurs are more likely to engage in innovative activities regardless of their extent of the pursuit of social goals.

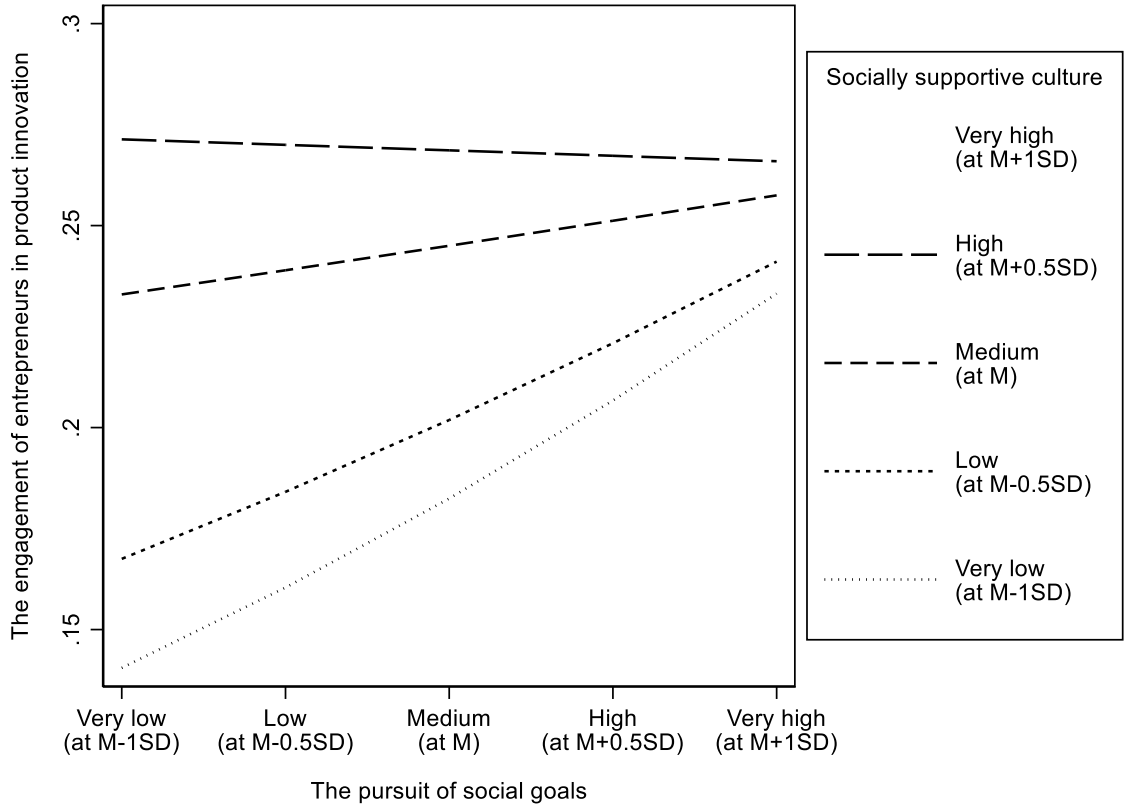


Figure 3.5 Interaction effect of the pursuit of social goals and socially supportive culture on the engagement of entrepreneurs in product innovation

Hypotheses 4a – 4b, 6a – 6b and 8a – 8b: The moderating effects of Institutions (Government activism, Postmaterialism cultural values and Socially supportive culture) on the relationship between The pursuit of Environmental goals and Innovative activities

As shown in Model 5 – 7 of Table 3.10, we lack statistical significance for the potential moderating effects of all three institutions (GA, PM and SSC) on the association between the pursuit of environmental goals and innovative activities (neither product nor process innovation). Therefore, Hypotheses 4a – 4b, 6a – 6b and 8a – 8b are not supported.

Robustness check:

As a robustness check, following Hoogendoorna, van der Zwanb and Thurik (2020), rather than using the score of points allocated for social goals and environmental goals, we take the fraction of social goals (social points/ (social points + economic points) and the fraction of environmental goals (environmental points/ (environmental points + economic points) as two individual-level independent variables. Table B.1 in Appendix B repeats the exercises of Table 3.10 with a different version of our independent variables and the results are quite similar.

Regarding the direct effects, the results in Table B.1 show that the pursuit of social goals has statistically significant positive effects on both product innovation (OR=2.14, $p < 0.10$) and process innovation (OR=1.78, $p < 0.10$), supporting Hypotheses 1a and 1b. However, both Hypothesis 2a and 2b are not supported.

Likewise, the results of the interaction effects are exactly the same. In this case, Hypotheses 3a (OR=1.07, $p < 0.01$) and 5a (OR=1.15, $p < 0.05$) are supported while Hypothesis 7b is no supported despite of the significant result (OR=0.04, $p < 0.01$). Figures B.1 – B.3 in Appendix B plotting interaction effects.

Table 3.11 Summary of the results

Hypothesis	Result	Conclusion
Hypothesis 1: The pursuit of social goals is positively related to the engagement of entrepreneurs in innovative activities: **(a)** product innovation **(b)** process innovation.	The pursuit of social goals has a significantly positive effect on the engagement of entrepreneurs in product innovation.	**H1a is supported**
	The pursuit of social goals has a significantly positive effect on the engagement of entrepreneurs in process innovation.	**H1b is supported**
Hypothesis 2: The pursuit of environmental goals is positively related to the engagement of entrepreneurs in innovative activities: **(a)** product innovation **(b)** process innovation.	The pursuit of environmental goals has a significantly positive effect on the engagement of entrepreneurs in product innovation.	**H2a is supported**
	We find no evidence of the positive relationship between the pursuit of environmental goals the engagement of entrepreneurs in process innovation.	H2b is not supported
Hypothesis 3: Government activism intensifies the positive association between the pursuit of social goals and the engagement of entrepreneurs in innovative activities: **(a)** product innovation **(b)** process innovation.	GA reinforces the positive effect of the pursuit of social goals on the engagement of entrepreneurs in product innovation.	**H3a is supported**
	We find no evidence of the moderating effect of GA on the positive relationship between the pursuit of social goals and process innovation.	H3b is not supported
Hypothesis 4: Government activism intensifies the positive association between the pursuit of environmental goals and the engagement of entrepreneurs in innovative activities: **(a)** product innovation **(b)** process innovation.	We find no evidence of the moderating effect of GA on the positive relationship between the pursuit of environmental goals and product innovation.	H4a is not supported
	We find no evidence of the moderating effect of GA on the positive relationship between the pursuit of environmental goals and process innovation.	H4b is not supported

Hypothesis 5: Postmaterialism cultural values intensify the positive association between the pursuit of social goals and the engagement of entrepreneurs in innovative activities: **(a)** product innovation **(b)** process innovation.	PM reinforces the positive effect of the pursuit of social goals on the engagement of entrepreneurs in product innovation.	**H5a is supported**
	We find no evidence of the moderating effect of PM on the positive relationship between the pursuit of social goals and process innovation.	H5b is not supported
Hypothesis 6: Postmaterialism cultural values intensify the positive association between the pursuit of environmental goals and the engagement of entrepreneurs in innovative activities: **(a)** product innovation **(b)** process innovation.	We find no evidence of the moderating effect of PM on the positive relationship between the pursuit of environmental goals and product innovation.	H6a is not supported
	We find no evidence of the moderating effect of PM on the positive relationship between the pursuit of environmental goals and process innovation.	H6b is not supported
Hypothesis 7: Socially supportive culture intensifies the positive association between the pursuit of social goals and the engagement of entrepreneurs in innovative activities: **(a)** product innovation **(b)** process innovation.	SSC attenuates the positive effect on the pursuit of social goals on the engagement of entrepreneurs in product innovation.	**H7a is not supported**
	We find no evidence of the moderating effect of SSC on the positive relationship between the pursuit of social goals and process innovation.	H7b is not supported
Hypothesis 8: Socially supportive culture intensifies the positive association between the pursuit of environmental goals and the engagement of entrepreneurs in innovative activities**: (a)** product innovation **(b)** process innovation.	We find no evidence of the moderating effect of SSC on the positive relationship between the pursuit of environmental goals and product innovation.	H8a is not supported
	We find no evidence of the moderating effect of SSC on the positive relationship between the pursuit of environmental goals and process innovation.	H8b is not supported

3.5 Discussion

By integrating institutional theory with the goal heterogeneity perspective in an innovation context, we advance a multilevel framework to examine how different types of institutional conditions interact with entrepreneurs' different goals, which in turn influences their likelihood of engaging in different types of innovation. We predict and find a significant and positive relationship between the pursuit of social and environmental goals and innovativeness. We also argue that government activism, postmaterialism cultural values, and socially supportive cultural norms as three institutional pillars which strengthen our main relationship. While our findings provide empirical evidence of the role of moderating effect of all three institutions of the association between the pursuit of social goals and product innovation, other predictions are not confirmed. These results have several implications for the work on social and environmental entrepreneurship along with the innovation literature.

3.5.1 Theoretical contributions

First, our findings advance the understanding of a potential consequence of socially and environmentally oriented entrepreneurship, that is innovation. Our research question is raised due to the literature says very little about the potential of innovation of entrepreneurs pursuing social and environmental goals (Hoogendoorn et al., 2020; Stephan et al., 2019) whereas innovation is seen as a critical key for socially and environmentally oriented entrepreneurial activities (Austin et al., 2006; Dean and McMullen, 2007; Peredo and McLean, 2006; Schaltegger and Wagner, 2011; Zahra et al., 2009). As our expectation, the findings reveal a significant and positive relationship between the pursuit of social goals as well as the pursuit of environmental goals and innovative activities, such that, socially and environmentally oriented entrepreneurs are indeed more innovative than their commercial counterparts. Therefore, this study calls greater attention to be paid to innovative activities as an important consequence of socially and environmentally oriented entrepreneurship.

Second, this study also highlights the difference in the pursuit of entrepreneurial goals as a source of heterogeneity in entrepreneurial innovation. We find that entrepreneurs pursuing social goals tend to engage in both product and process innovation while those who pursuing environmental goals

seemly focus on only product innovation. Our findings contribute to shed light on how the inherent distinctions in the pursuit of entrepreneurial goals shape the difference in certain entrepreneurial behaviors, namely, the tendency of choosing the types of innovation. It showcases that integrating insight from the goal heterogeneity into research on entrepreneurship is a fruitful avenue for future research. Accordingly, researchers might consider goal heterogeneity (e.g., economic versus social versus environmental goals) as an important antecedent in explaining the variances in other entrepreneurial activities (e.g., growth, export) or in the outcomes of social and environmental entrepreneurship (e.g., empowerment, cultural and institutional change).

Furthermore, our findings are at odds with the study of Hoogendoorn, van der Zwan and Thurik (2020) that find positive effects of environmental (relative to economic) goals on both product and process innovation while the pursuit of social goals only positively influences product innovation. Hoogendoorna, van der Zwan and Thurik (2020) defined the independent variable in two ways: as the difference in allocated points between environmental and economic goals (environmental goals = environmental points - economic points) and as the fraction points (environmental goals = environmental points/ (environmental points + economic points). Both measures omit the data of the third one (in this case, the points allocated for social goals) because the GEM question allocates 100 points for three goals. To explore if different findings come from the difference in the measure of the independent variables, we tested our study with an alternative measurement of independent variables that is the fraction of social and environmental goals. However, we find that the pursuit of social goals has significant positive effects on both product and process innovation, but the pursuit of environmental goals does not. Accordingly, this may suggest that our study seemly provided a better indicator to measure the pursuit of social and environmental goals.

Third, this study also adds to our understanding of the influence of institutional contexts on entrepreneurial activities by investigating the relationship between three institutional factors, goal heterogeneity, and different types of innovation. We respond to calls for more context-sensitive theory and research on entrepreneurship (Welter, 2011; Zahra and Wrights, 2011) and advances understanding of the impact of institutional context on entrepreneurial innovation (Autio et al., 2014).

On one hand, by integrating innovation literature and institutional theory to the field of social and environmental entrepreneurship, we deliver a new profound understanding of how entrepreneurs pursuing social and environmental goals can be supported or limited by their countries' institutions in engaging in innovative activities. We find that GA and PM further enhance the innovativeness of socially oriented entrepreneurs, which is in line with our predictions. These findings provide strong backing for the institutional support perspective, thereby, suggesting that greater GA further extend social entrepreneurial activities, including not only the creation of new socially oriented venture (Hoogendoorn, 2016; Stephan et al., 2015) but also socially oriented entrepreneurial outcome, namely, innovation. Surprisingly, incompatible with our expectation, while low-medium SSC lessens the positive link between the pursuit of social goals and innovative activities, strong SSC does not moderate this relationship. One possible explanation for this result is when living in cultures with strong socially supportive norms, entrepreneurs receive multiple help and support leading to reduce transaction costs and heighten access to needed resources. SSC also shapes an environment of great tolerance for mistakes and failures. Therefore, SSC boosts entrepreneurs' confidence to engage in innovative activities regardless of their extent of the pursuit of social goals. Our findings point to the importance of complementary supports from SSC for entrepreneurs' propensity to pursue social goals.

Additionally, we did not find moderation effects across the board of three institutional factors (GA, PM and SSC) on the relationship between the pursuit of environmental goals and innovative activities. We believe that our focus on three institutional pillars (GA, PM and SSC) which seemly reflect non-compulsory conditions rather than compulsory ones, may explain these results. Numerous previous studies reported the decision to engage in innovative activities of environmentally oriented entrepreneurs are a direct consequence of compliance with government regulations (Ford, et al., 2014; Horbach, 2008; Schiederig et al., 2012). In other words, the decision on the involvement in environmental innovation is strongly influenced by institutional compulsory factors (e.g., rule, law, regulation), but not by institutional non-compulsory factors (e.g., governmental incentives, public encouragement). In line with our explanation, Hoogendoorn, van der Zwan and Thurik (2020) find that in countries with more stringent environmental legislation (compulsory factor), environmental start-ups

are more strongly associated with product innovations while environmentally related taxes (non-compulsory factor) do not affect this relationship. Future research could investigate our expectations on the different influence between institutional compulsory and non-compulsory factors on the decision to engage in innovative activities of environmentally oriented entrepreneurs.

On the other hand, our findings also highlight the difference between product and process innovation through the influence of institutional factors. We observed that institutional contexts (all three factors: GA, PM and SSC) influence the positive effect of the pursuit of social goals on product innovation but not on process innovation. Some possible explanations are related to the nature of process innovation. As distinguished in Table 3.1, process innovation often happens more inside the organizations while product innovation requires interaction with customers outside the organizations and thus it is reasonable that the product innovation ("outside" related innovation) is more shaped by institutional contexts while process innovation (firm-internal innovation) might less affected. Indeed, a health and safety manager of a copper pipe manufacturing company stated that "when a new legislation or guideline is published, we first try to see whether our processes are already compliant and in many cases they are. So, compliance then makes us focus more on developing the right documentation and less on the introduction of new processes."(Tsinopoulos et al., 2018, p.42). Furthermore, the requirement of the degree of novelty in the product innovation is somewhat higher than in process innovation. Thus, product innovation may benefit from the supportive contexts more than process innovation.

3.5.2 Practical implications

Innovative activities are recognized to generate their financial and non-financial benefits for both organizations and the economy, such as profitability (Czarnitzki and Kraft, 2010; competitive advantage (Tushman and O'Reilly, 1996); growth (McKelvie et al., 2017); long-term survival (Banbury and Mitchell, 1995; Colombelli et al., 2016) and, ultimately, economic growth (Hébert and Link, 1989; Schumpeter, 1934). Thus, understanding the source of innovative activities will be a particularly interesting target for policymakers.

Our study offers several implications for policymakers. *First,* policymakers should be intensely mindful of the goals that entrepreneurs, in their country, are pursuing. This is because understanding pursued goals would help them to predict entrepreneurs' propensity of engagement in innovation as well as the type of innovation that entrepreneurs choose.

Second, governments apply a variety of measures, such as incentives (e.g., subsidies, rewards) or pressures (e.g., regulations, standards, taxes) to promote socially and environmentally oriented innovative activities. Yet, our study provides empirical evidence that types of supports from the government and the public do not always stimulate the innovation of all entrepreneurs. What may work for socially oriented entrepreneurs, may not for environmental oriented entrepreneurs. Thus, policymakers should tailor measures depending on the types of entrepreneurs.

Third, the findings on the effects of PM and SSC on the innovativeness of socially and environmentally oriented entrepreneurs suggest when pondering policy decisions, policymakers need to be aware of what cultural contexts are still operating in their countries including both prevalent cultural values and descriptive norms regarding social support.

3.5.3 Limitations and Directions for Future Research

In spite of theoretical contributions and practical implications, our research also has several limitations. First, the study only distinguished two types of innovative activities: product and process innovation. We also examined the effects on two variables in two independent and separate models. However, in addition to product and process innovation, there are other innovative activities such as market innovation, organization innovation. Furthermore, in practice, these innovative activities are interconnected (Damanpour, 2010; Lee et al., 2017). Hence, we encourage future work to explore the interrelationship among a diversity of innovative activities.

Similarly, our research considers social and environmental goals as two independent goals which entrepreneurs will choose to pursue doing their business. Nevertheless, the literature provided evidence that entrepreneurs could pursue multiple goals simultaneously and there exists a link between goal multiplicity to innovation (Stephan et al., 2019). Therefore, future research may replicate this study

by investigating how the interplay of goal multiplicity and institutional contexts affect innovative activities.

Finally, we also note limitations associated with the fact that the number of national contexts represented in our sample is still limited although we draw on a rich multi-country dataset GEM which enables us to apply multilevel modelling. This leads to the statistical power of our analyses, which may be too low to identify all the expected effects. Thus, future research may replicate our findings based on a dataset including a greater variety of national contexts to explore potential linkages highlighted in our study.

3.6 Conclusion

This study is an important step towards understanding goal heterogeneity as a key to explaining the variability in innovative activities. We find robust evidence in the multilevel analysis with 2,895 young entrepreneurs in 26 countries that those who pursue social and environmental goals are more innovative than those who pursue economic goals. This finding advances the research of innovation as a potential consequence of socially and environmentally oriented entrepreneurship. Besides, by considering the moderation effects of institutional contexts on these relationships, we contribute to highlight the different nature between socially and environmentally oriented entrepreneurship which previous studies are overlooked. This study also enriches our understanding of the important role of institutional factors on entrepreneurship, when providing empirical evidence of the influence of GA, SSC and PBC in the positive link between the pursuit of social goals and product innovation.

Chapter 4

Growth aspirations of entrepreneurs pursuing social and environmental goals during the economic crisis

Abstract

This paper investigates how goal heterogeneity influences entrepreneurs' employment growth aspirations. In addition, the study looks into how entrepreneurs pursuing various goals respond to the change in the economic climate, specifically, in the economic crisis. Performing multilevel linear regressions with 5,605 young entrepreneurs in 48 countries (GEM data), we find that those who pursue social and environmental goals have higher growth aspirations than those who pursue economic goals. Furthermore, through a parallel multiple-mediator model using the MSEM (Multilevel structural equation modelling), we unpack this relationship through the perception mechanisms. The findings show that the pursuit of social and environmental goals has positive indirect effects on growth aspirations through the perception of the low competition intensity in the market during the economic crisis. Therefore, these findings advance our understanding of growth aspirations as a potential outcome of socially and environmentally oriented entrepreneurship, which are overlooked in the literature. They also deepen our understanding of growth-oriented social or environmental entrepreneurship by unpacking two mechanisms of what drives growth aspirations of entrepreneurs pursuing social and environmental goals, namely opportunity perception and perceived competition. Additionally, this study enriches the economic crisis literature by offering the important first insight into the promise of socially and environmentally oriented entrepreneurs in the economic crisis.

Keywords: Employment growth aspirations, social and environmental goals, opportunity perception, perceived competition, economic crisis, Global Entrepreneurship Monitor

4.1 Introduction

In the light of the global scale of grand challenges (such as poverty, inequality and climate changes), not only academics but also governments and practitioners increasingly show an appreciation for organisations that seek to address social and environmental issues through business ventures (Dacin, Dacin and Tracey, 2011). Hence, not surprisingly, there is a significant increase in the number of social and environmental entrepreneurship literature (Gast et al., 2017 and Saebi et al., 2019; for general reviews). Social impact, which is one of the pivotal elements of social and environmental entrepreneurship, also gains much attention (Rawhouser et al., 2019; Stephan et al., 2016). Social impact can be generated in different ways, for both internal and external stakeholders (Brickson, 2007). Socially and environmentally oriented entrepreneurs are commonly known to advance social and environmental benefits through providing products and services to resolve social or environmental issues. However, one of the ways how all entrepreneurs can positively contribute to society is by providing employment for others. Yet, so far, we know very little about the job creation potential of entrepreneurs pursuing social and environmental goals.

Previous studies indicate that an entrepreneur's growth aspirations, reflecting a willingness to expand the business (Delmar and Wiklund, 2008), are an important antecedent to actual firm growth (Davidsson et al., 2006; Stam and Wennberg, 2009). While research on the aspirations for growth of commercial new business ventures is well developed (Stam et al., 2012 for a review), the literature says little about growth aspirations of entrepreneurs pursuing social and environmental goals, as well as why and under which context socially or environmentally oriented entrepreneurs seek to grow their business. Indeed, due to the absence of empirical evidence, the theoretical discussion on the extent of growth aspirations of entrepreneurs pursuing social and environmental goals has not come to an end. On one hand, many scholars argue that socially or environmentally oriented entrepreneurs are less focused on economic goals and risk-averse. At the same time, they are much concerned about increasing tensions in prioritizing social or environmental goals whilst maintaining financial success as well as about mission drifts during the growth process (Andre´ and Pache, 2016; Battilana and Dorado 2010; Lumpkin et al., 2013; Shaw and Carter, 2007; Weerawardena and Mort, 2006). These matters are

thought to restrain the aspirations for growth among entrepreneurs pursuing social or environmental goals. On the other hand, others assume that socially and environmentally oriented entrepreneurs are persuaded to take risks of growth due to the abundance of opportunities emerging by the prevalence of social and environmental problems alongside the desire to magnify the social impact (Dees et al., 2004; Zahra et al., 2008).

Furthermore, differences in pursued goals may lead to different entrepreneurial outcomes (Shane et al., 2003; Van de Ven et al., 2007) such as growth aspirations. While the differences in pursued goals can be considered as an important source of differences in growth aspirations among entrepreneurs (Hermans et al., 2015), up to date, no research explores how heterogeneity in goals influence entrepreneurs' growth aspirations in the entrepreneurship literature (neither commercial nor social/environmental entrepreneurship). Accordingly, considering the heterogeneity in goals enriches our understanding of what drives differences in growth aspirations among entrepreneurs, which is underexplored in the existing literature. In this study, thus, drawing on differences between pursuing other-regarding interests (social and environmental goals) versus self-regarding interests (economic goals), we explore the role of goal heterogeneity in explaining variability in employment growth aspirations.

Additionally, entrepreneurial activities are also seen as highly dependent on the change of the current economic climate, e.g., economic crisis (Klapper and Love, 2011). Indeed, the literature shows that the economic crisis creates many challenges for entrepreneurial activities such as the reduced demand for products and services (Shane, 2011), limited access to financing (Cowling et al., 2012), limited resources and decreased investments in innovative activities (Lee et al., 2015). The previous literature finds that commercially oriented entrepreneurs express strong growth aspirations in difficult economic conditions (Giotopoulos et al., 2017a.; Giotopoulos et al., 2017b; Stephan et al., 2015 for a review). Yet, it is surprising that no research investigates how the growth aspirations of entrepreneurs pursuing social and environmental goals are influenced by the economic crisis despite the crucial role of socially and environmentally oriented entrepreneurial activities. Indeed, social and environmental issues are exacerbated by the negative effects of the economic crisis (Quelch and Jocz, 2009). In such

a context, the growth of socially and environmentally oriented entrepreneurship becomes remarkably critical as it might significantly contribute to tackling social and environmental problems due to detrimental impacts of the crisis, at the same time, advancing the quick recovery of a country.

Thus, to advance our understanding of how the economic crisis influences the growth aspirations of entrepreneurs pursuing social and environmental goals, we look at two mechanisms. On one hand, this study considers the economic crisis plays a role as a boundary condition which moderates the relationship between the pursuit of social/environmental goals and growth aspirations. On the other hand, we propose new insights from opportunity perceptions and perceived competition as two perception mechanisms to unpack through what processes the economic crisis influences the growth aspirations of socially and environmentally oriented entrepreneurs. Opportunity perception is considered as a critical part not only in the entrepreneurship process (Bhave, 1994; Shane and Venkataraman, 2000) but also in ambitious entrepreneurship (Hermans et al., 2015; Stam et al., 2009). Similarly, entrepreneurs often perceive competition as one of the critical challenges to the survival or development of their organizations (Rahmandad, 2012). Accordingly, it can be argued that the economic crisis gives rise to the changes in the business environments and the transformation of the markets, which affect not only entrepreneurial activities but also the perception of individuals on opportunities or challenges in expanding their business. The aspirations for growth, in turn, are possibly altered by how an entrepreneur recognizes advantages or disadvantages for their business development in such a turbulent period. In other words, we suppose that growth-related opportunity perception and perceived competition during the economic crisis may mediate the relationship between the pursuit of social/environmental goals and growth aspirations.

Therefore, our study aims to fulfil these gaps by examining how the heterogeneity in pursued goals affects entrepreneurs' employment growth aspirations (Research question 1). We also investigate the mechanism by which the growth aspirations of entrepreneurs pursuing social and environmental goals are shaped by the impact of the economic crisis (Research question 2). This paper makes several contributions. First, our findings contribute to resolving the theoretical debate on the extent of growth aspirations of entrepreneurs pursuing social or environmental goals. Second, this study contributes to

shedding light on how the heterogeneity in pursued goals shape the difference in certain entrepreneurial outcomes, namely different patterns of growth aspirations. Third, this study also deepens our understanding of growth-oriented social or environmental entrepreneurship by unpacking two mechanisms of what drives growth aspirations of entrepreneurs pursuing social and environmental goals, namely opportunity perception and perceived competition. Fourth, this study extends the economic crisis literature by providing the important first insight into the potential role of socially and environmentally oriented entrepreneurs in the economic crisis.

4.2 Research framework and hypotheses

4.2.1 The pursuit of goals

Goals in entrepreneurship used to be known as a single focus on economic goals, which is creating profit for entrepreneurs and their partners. Indeed, traditionally, goals for starting a business are considered to be economic (Schumpeter, 1934). Accordingly, the entrepreneur is defined as an individual who does something for economic gain (Carsrud and Brännback, 2009). Yet, there is increasing acknowledgement of the heterogeneity of entrepreneurship (Schaefer et al., 2015; Schaltegger and Wagner, 2011; Thompson et al., 2011; Welter et al., 2017) which is constituted from the diversity in entrepreneurial goals (Carter et al., 2003; Shaver et al., 2001). Social and environmental entrepreneurship is an example of such goal heterogeneity. Accordingly, besides the economic goals, entrepreneurs may pursue social or environmental goals, which create desirable outcomes for not only the organization but also stakeholders, society and the environment (Elkington, 2004).

The pursuit of social goals reflects an entrepreneur's propensity to direct their organization's activities towards the creation of social value. Socially oriented entrepreneurs care for the alleviation of social issues (Thompson et al., 2011) such as poverty and poor living condition, inequality, social exclusion, public health issues. These entrepreneurs focus on solving societal problems (Mair and Marti, 2006; Short et al., 2009; Zahra et al., 2009) through providing goods to marginalised and disadvantaged groups or providing access to innovation for deprived market segments.

The pursuit of environmental goals reflects an entrepreneur's propensity to direct their organization's activities towards the creation of environmental value (preservation and regeneration of the natural environment) (Dean and McMullen, 2007; Schaltegger, 2002; York and Venkataraman, 2010). Environmentally oriented entrepreneurs focus on solving environmental problems through their business (Thompson et al., 2011) such as providing eco-friendly products and services; preventing pollution; recycling, producing clean energy; building an environmental management system.

4.2.2 Growth aspirations

The ambitious entrepreneur is described as "someone who engages in the entrepreneurial process with the aim to create as much value as possible" (Stam et al., 2012, p.26). This implies that: “growth is a prevalent dimension to empirically capture ambitious entrepreneurship”. (Hermans et al., 2015, p.136). Growth motivations or aspirations reflect an entrepreneurs’ willingness to expand their business (Delmar and Wiklund, 2008). They are considered as the important predictors of ambitious entrepreneurship, of actual firm growth (Davidsson, Delmar and Wiklund, 2006; Hermans et al., 2015; Stam and Wennberg, 2009). Studies in the current literature often apply different indicators of growth aspirations: sales/profits and employment (Stam et al., 2012 for a review). Capturing growth in terms of employment is more popular than sales or profits dimensions in the literature (Nason and Wiklund, 2018).

More importantly, in this paper, we explore the growth aspirations of those who pursue social or environmental goals. In this vein, socially and environmentally oriented entrepreneurs' growth aspirations reflect their desire to increase the scale of their activities to expand social impacts rather than to maximize financial performance. Meanwhile, providing employment for others can be seen as one of the ways to create social impact. As a result, this paper focuses on the employment growth aspirations of socially and environmentally oriented entrepreneurs.

The growth aspirations of commercial entrepreneurs have long been a topic of interest to scholars (Stam et al., 2012 for a review). Indeed, there are a large number of studies on antecedents of growth aspirations in the commercial entrepreneurship literature. More particularly, much research

provides evidence that growth aspirations are influenced by a range of demographic variables (e.g., age, gender and ethnicity) (Edelman et al., 2010; Estrin et al., 2013; Levie and Autio, 2013; Levie and Hart, 2013; Puente et al., 2017). Personal traits and values are seen as associated with growth aspirations (Levie and Autio, 2013). The combination of financial and human capital plays an important role in explaining differences in growth aspirations (Autio and Acs, 2010; Bowen and Clercq, 2008; Efendic et al., 2015; Estrin et al., 2013; Levie and Autio, 2013). Strategic orientation including the overarching direction and goals of an entrepreneur such as innovative and international orientations is an important influence on the aspirations of growth (Estrin et al., 2019; Kolvereid and Isaksen, 2017). Finally, the influence of contexts, from formal and informal institutions to macro and socio-economic conditions on growth aspirations is also noted (Autio and Acs, 2010; Autio et al., 2013; Bowen and Clercq, 2008; Efendic et al., 2015; Estrin et al., 2013; Hessels et al., 2008a; Levie and Autio, 2013; Puente et al., 2017). Compared to a large body of literature of growth aspirations of commercial entrepreneurship (Stam et al., 2012 for a review), we know little about the aspirations for growth of entrepreneurs pursuing social or environmental goals.

4.2.3 The pursuit of goals and growth aspirations

There are different views of the extent of growth aspirations of socially and environmentally oriented entrepreneurs in the literature. On one hand, many scholars suppose that entrepreneurs pursuing social or environmental goals possibly have little desire to grow their business (Andre´ and Pache, 2016; Battilana and Dorado 2010; Lumpkin et al., 2013; Shaw and Carter, 2007; Weerawardena and Mort, 2006) due to being risk-averse. Socially and environmentally oriented entrepreneurs are commonly depicted as risk-averse entrepreneurs who may prefer to settle for a more modest business scale to safeguard their social or environmental goals and the survival of their organizations than taking high risks to pursue opportunities to grow (Lumpkin et al., 2013; Weerawardena and Mort, 2006; Vickers and Lyon, 2014). On the other hand, others assume that the abundance of opportunities coming from the diversity and multifaceted of social or environmental issues together with the desire to intensify social impacts persuade socially or environmentally oriented entrepreneurs to take risks of growth (Dees

et al., 2004; Zahra et al., 2008). Therefore, to shed light on this discussion, our study offers an initial step to explore the growth aspirations of entrepreneurs pursuing social and environmental goals.

Additionally, differences in pursued goals may result in different entrepreneurial outcomes (Shane et al., 2003; Van de Ven et al., 2007) such as growth aspirations. While the heterogeneity in entrepreneurial goals can be considered as an important source of differences in growth aspirations among entrepreneurs (Hermans et al., 2015), up to date, no research explores how heterogeneity in goals influence entrepreneurs' growth aspirations in the literature of commercial as well as social and environmental entrepreneurship. Accordingly, considering the heterogeneity in goals enrich our understanding of what drives differences in growth aspirations, which is underexplored in the existing literature. Therefore, in this study, drawing on differences between pursuing other-regarding interests (social and environmental goals) versus self-regarding interests (economic goals), we explore the role of goal heterogeneity in explaining variability in employment growth aspirations.

Despite some differences, both social and environmental goals reflect caring about other-regarding interests instead of self-regarding ones (e.g., economic goals). Thus, through the two following reasons, we expect that the stronger their pursuit of social or environmental goals is, the higher their aspirations for growth are.

First, we argue that the intrinsic motivation of socially and environmentally oriented entrepreneurs stimulate their growth aspirations. Guzmán and Santos (2001) demonstrate that commercial growth-aspiring entrepreneurs are characterized by higher levels of intrinsic motivation while commercial entrepreneurs who are less growth-aspiring have higher levels of extrinsic motivation. They explained that intrinsic motivation is linked to an entrepreneurial vocation or need for personal development, whereas extrinsic motivation has a stronger relationship with material factors such as wealth-maximizing need, economic necessity or family tradition. Entrepreneurs with intrinsic motivations opt for business growth as they believe in an inherent value of entrepreneurial activities and they think that they will reach some personal development through it. In addition, they are assumed as those who possess "a non-conformist behaviour impelling them to adopt decisions that may situate the enterprise they manage in a more competitive position to face the surrounding environment."

(Guzmán and Santos, 2001, p.221). In analogy to this, we argue that the pursuit of social and environmental goals is a desire stemming from an entrepreneur's free volition, which facilitates their intrinsic motivation. In turn, the intrinsic motivation of socially and environmentally oriented entrepreneurs would probably create a higher level of their aspirations for growth because they possibly consider increasing the size of their business as a way to realize their vision. Indeed, a large study combining GEM data and in-depth interviews in the UK points out that the desire to generate positive contributions to society and the environment constitutes an entrepreneur's challenge motivations which are strongly related to their aspirations for growth (Stephan et al., 2015).

Second, we also suggest that collaborative and cooperative activities will boost the growth aspirations of entrepreneurs pursuing social and environmental goals. An entrepreneur can identify entrepreneurial opportunities by recognizing social and environmental issues. However, opportunity development requires the interaction of multiple actors (Corner and Ho, 2010). Therefore, to attain social and environmental goals, socially and environmentally oriented entrepreneurs commonly associate with diverse stakeholders (e.g., customers, suppliers, distributors, community, government and other organizations) to find and implement solutions for social and environmental issues over long periods (Stephan et al., 2016). They also participate in cross-sector collaborations to access new knowledge and skills. Indeed, an empirical study by Stephan, Andries and Daou (2019) provide evidence that a higher emphasis on social and environmental goals promotes more engagement in such external knowledge sourcing and collaboration. Thereby, partnerships and supportive networking will facilitate social entrepreneurs' acquisition of novel knowledge and skills, obtaining legitimacy, mobilizing needed resources to identify and develop growth opportunities, in turn increasing their aspirations for growth. Furthermore, these collaborative and cooperative activities will contribute to reinforcing the organization's competitive position in the market and allow it to achieve a higher degree of growth, then lifting entrepreneurs' growth aspirations (Guzmán and Santos, 2001). In line with this argument, the literature points that the stakeholders' support along with collaborative sharing helps entrepreneurs "move both from opportunity formalization to opportunity exploitation and from exploitation for scalability" (Perrini, Vurro and Costanzo, 2010, p.527). Taken together, we propose:

Hypothesis 1: The entrepreneurs that pursue social goals (relative to economic goals) are the higher growth aspirations.

Hypothesis 2: The entrepreneurs that pursue environmental goals (relative to economic goals) are the higher growth aspirations.

4.2.4 The economic crisis

Humans experience many economic crises throughout modern history. As a consequence, the economic crisis becomes a prominent and growing topic in both academic and public areas (Doern et al., 2019). Entrepreneurial activities are also affected by the economic crisis (Klapper and Love, 2011) due to the reduced demand for products and services (Shane, 2011), limited access to financing (Cowling et al., 2012), limited resources and less innovative investments (Lee et al., 2015). The previous studies reveal that commercially oriented entrepreneurs express strong growth aspirations in such a context (Giotopoulos et al., 2017a.; Giotopoulos et al., 2017b; Stephan et al., 2015 for a review). However, while the literature notes a large number of studies on the influence of contexts on social and environmental entrepreneurship (Gast et al., 2017 and Saebi et al., 2019; for reviews), we know very little about how the change of economic climate like economic crisis affect socially and environmentally oriented entrepreneurs in general and their growth aspirations in specific.

The growth of socially and environmentally oriented entrepreneurial activities play an important role in the economic crisis context. The economic crisis poses many serious challenges to the economy, leading to the shrinkage or shutdown of business and numerous unemployed (Choudhry et al., 2012; Chzhen, 2016; Pavlínek and Ženka, 2010; Perles-Ribes et al., 2016), thereby, creating social precarity and damage. These negative consequences stemming from the crisis possibly exacerbate unsolved social and environmental problems and even generate new ones (Quelch and Jocz, 2009). Indeed, according to a report by the International Labour Organization (ILO, 2015), the economic crisis in the context of developing countries such as Asia, Latin America and the Middle East is threatening a regression of their recent progress in reducing poverty. Similarly, the report from the United Nations Environment Programme (UNEP, 2020) indicates that during the economic downturn, many

environmental policy processes slow, including the commitment to global action on climate issues. Concomitantly, innovative activities and investments in environmental issues also reduce. In such a context, the growth of socially and environmentally oriented entrepreneurial activities becomes critical, as it would significantly contribute to tackling the negative impacts of the crisis, as well as promoting the country's speedy recovery. Despite the important role of growth activities related to social and environmental goals in the context of economic crisis, no research explores how the economic crisis influence aspirations for the growth of entrepreneurs pursuing social or environmental goals.

To advance our understanding of how the economic crisis influences the growth aspirations of entrepreneurs pursuing social and environmental goals, we look at two mechanisms. First, we consider the economic crisis as a boundary condition which moderates the relationship between the pursuit of social/environmental goals and growth aspirations. Second, we suppose that entrepreneurs pursuing social and environmental goals, through the perception mechanism, form their assessment of the adverse economic environmental effects, seen as opportunities or challenges, leading to an increase or decrease in their growth aspirations.

4.2.4.1 The economic crisis as the moderators of the relationships between the pursuit of goals and growth aspirations

On one hand, the economic crisis deepens social and environmental issues, which stimulate the growth aspirations of socially and environmentally oriented entrepreneurs. The stronger the economic crisis is, the scarcer the employment opportunities are, at the same time, the poorer the social and environmental conditions are (Brünjes and Revilla Diez, 2013). Thereby, the depressed labour market alongside inadequate social and environmental conditions possibly exacerbates unsolved social and environmental problems and even triggers new social and environmental issues (Quelch and Jocz, 2009). In such context, socially and environmentally oriented entrepreneurs possibly consider the expansion of business to satisfy social and environmental needs arising from the economic crisis, as an opportunity to fulfil their vision as well as to demonstrate their ability.

On the other hand, the pressure of avoiding financial failure and ensuring the survival of the organizations in the economic crisis period may push entrepreneurs to pursue social and environmental goals to grow their business. In general, socially and environmentally oriented organizations are small (Desa and Basu, 2013; Haugh, 2005). A liability of smallness reflects that the smaller the firm the fewer resources it typically controls, which makes it more vulnerable to internal and external events (Freeman, Carroll and Hannan, 1983). Accordingly, such firms may suffer a greater risk of failure when being hit by an economic crisis. Therefore, socially and environmentally motivated entrepreneurs may consider that scaling the business is a "way to cope with the challenges" (Tykkyläinen, 2019, p.388), especially in times of economic crisis. Indeed, the UK survey of commercial entrepreneurs finds the increase in growth aspirations during the economic crisis that reflects the fact that entrepreneurs may feel to need to grow their businesses to overcome the liability of smallness when they face financial pressures in the crisis (Stephan et al., 2015). Given the above, we propose:

Hypothesis 3: The severity of the economic crisis strengthens the positive association between the pursuit of social goals and an entrepreneur's growth aspirations.

Hypothesis 4: The severity of the economic crisis strengthens the positive association between the pursuit of environmental goals and an entrepreneur's growth aspirations.

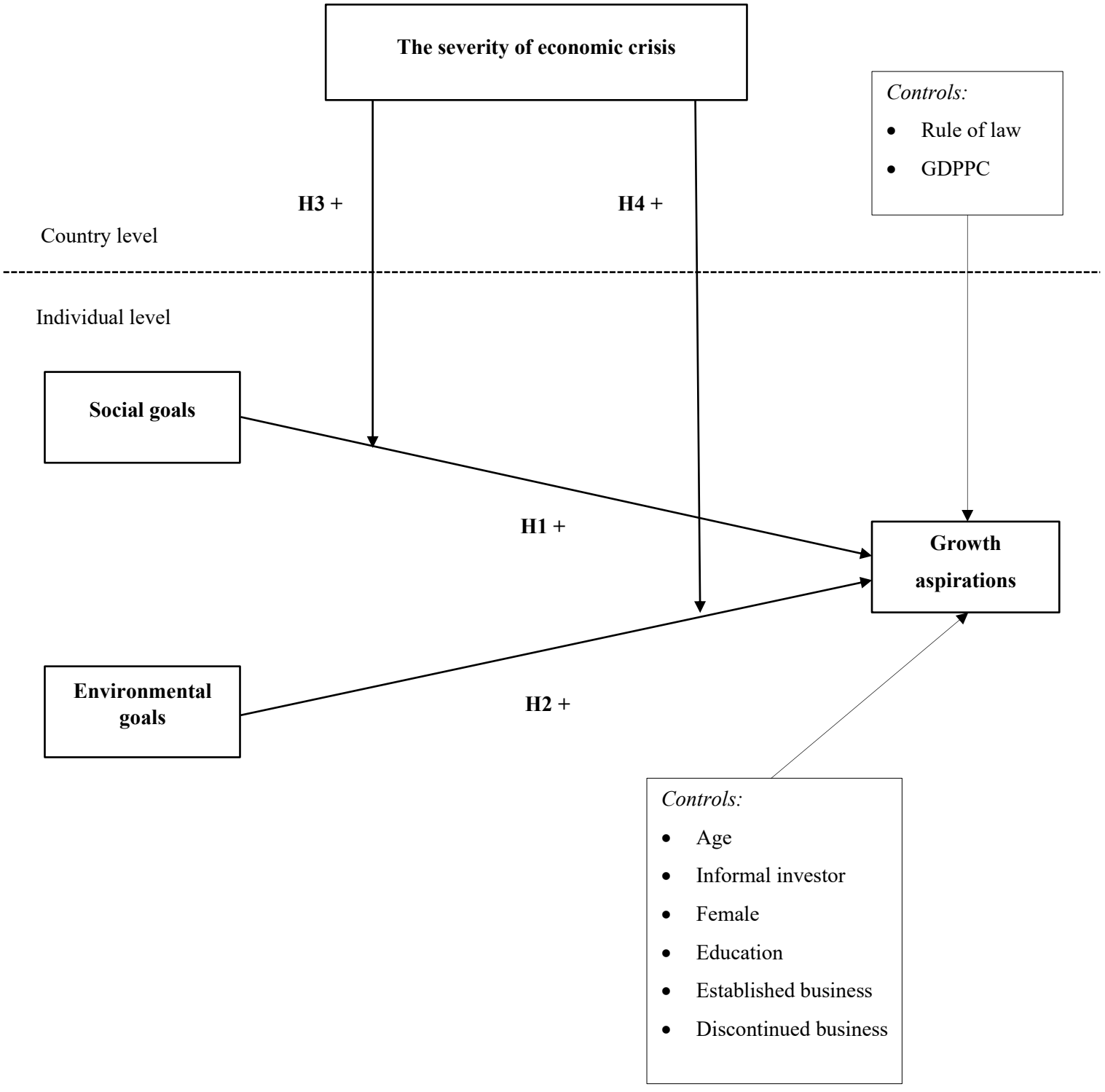


Figure 4.1 Research model 1 of chapter 4

4.2.4.2 The relationships between social and environmental goals and growth aspirations via entrepreneurs' opportunity perception and perceived competition in economic crisis periods

4.2.4.2.1 Opportunity perception

Opportunity perception is considered as a critical part not only in the entrepreneurship process (Bhave, 1994; Shane and Venkataraman, 2000) but also in ambitious entrepreneurship (Hermans et al., 2015; Stam et al., 2009). Entrepreneurs explore and exploit opportunities in the market, combing the former with accessing and employing resources to realize their growth aspirations. While there are different perspectives on the meaning of opportunities (Davidsson, 2015 for a review), in this study, we focus on an entrepreneur's perception of entrepreneurial opportunities for business growth.

The rise in the number of laid-off individuals along with a drop in social security during the economic crisis (Brünjes and Revilla Diez, 2013) worsen unsolved social and environmental problems, even trigger new ones. Entrepreneurs pursuing social and environmental goals are often embedded in their communities. Hence, they are well-positioned to quickly identify and uncover such social and environmental needs (Grube and Storr, 2018; Linnenluecke and McKnight 2017), then fill these gaps based on their experience-related knowledge and available resources.

Moreover, socially and environmentally oriented entrepreneurs are more likely to perceive further benefits of meeting the social and environmental needs of communities in adverse economic circumstances. Maintaining the flow of current products and services or providing new ones serving on social and environmental needs could be considered as a solution to minimize the impact of a crisis; that helps socially and environmentally oriented entrepreneurs to build brand images as well as reputation.

Hypothesis 5: Opportunity perception positively mediates the positive relationship between an entrepreneur's pursuit of social goals and their growth aspirations.

Hypothesis 6: Opportunity perception positively mediates the positive relationship between an entrepreneur's pursuit of environmental goals and their growth aspirations.

4.2.4.2.2 Perceived competition

"Entrepreneurship and competition are two sides of the same coin: that entrepreneurial activity is always competitive and that competitive activity is always entrepreneurial" (Kirzner, 1973, p.94). Competition can be considered as one of the critical challenges to the survival or development of an organization (Rahmandad, 2012). An organization's competition includes not only all of its current competitors but also potential competitors poised to enter the industry at some future day (Baumol and Panzar, 1982).

It can be expected that the fewer competitors in the market, the more space to grow the business, thereby, the stronger entrepreneurs' growth aspirations. Following Kohli and Jaworski (1990), strong competition leads to multiple choices for customers. Consequently, an organization is likely to lose customers to the competition and fare poorly. In contrast, as fewer competitors remain in the market, customers have fewer alternatives to satisfy their needs and current firms will have more potential for growth. Despite the importance of perceived competition on entrepreneurial activities in general and on venture growth in specific, there is very little research in the literature (Abebe and Angriawan, 2014; Auh and Menguc, 2005; Estrada-Cruz et al., 2020; Martin and Javalgi, 2016; Mazzucato and Parris, 2015; O'Reilly III and Tushman, 2013; Whittaker et al., 2020). Even, as far as we know, no studies investigated the relationship between perceived competition and growth aspirations.

Furthermore, competition appears to attract insufficient interest from social and environmental entrepreneurship scholars. The first possible reason comes from the extent of competition in the market that socially and environmentally oriented organisations face to. Entrepreneurs pursuing social or environmental goals regularly focus on identifying one or several specific social or environmental issue(s) and then resolving these specific issues through their business. Accordingly, they often enter the market with a niche position or even create a new niche outside the current market, where they satisfy the unmet social or environmental needs of specific customers (Schaltegger and Wagner, 2011). A large number of other entrepreneurs are likely to "neglect these niches either because they do not recognize them, because they do not consider them to be attractive enough or because they are not able to fulfil these specific customer preferences well enough" (Schaltegger and Wagner, 2011, p.229). Thus,

it is supposed that socially or environmentally oriented entrepreneurs might encounter less competition than their business counterparts.

Another explanation comes from conditions that enable socially and environmentally oriented entrepreneurs to achieve their goals. Differing from their business counterparts, the primary interest of entrepreneurs pursuing social and environmental goals is not to achieve a competitive economic advantage. Instead, they seek to address social and environmental issues, and then scale social impact as widely and deeply as possible (Perrini et al., 2010). This requires socially and environmentally oriented entrepreneurs to associate with multiple stakeholders (e.g., customers, suppliers, distributors, community, government and other organizations) (Stephan et al., 2016). Many studies point out that pursuing social and environmental goals through leveraging traditional business activities leads entrepreneurs to engage in both cooperative and competitive oriented actions simultaneously (Arenas, Hai, and De Bernardi, 2021; Planko et al., 2019; Volschenk, Ungerer, and Smit, 2016). They are even willing to forge alliances with competitors to gain social and environmental benefits (Herbst, 2019). Thus, existing research mainly focuses on the important role of collaboration (e.g., de Bruin, Shaw and Lewis, 2017; Di Domenico, Tracey and Haugh, 2009) or coopetition (combination of cooperation and competition) (e.g., Arenas et al. 2021; Volschenk et al., 2016) and overlook the influence of competition on social and environmental entrepreneurship. Therefore, to shed light on this gap, this study provides an initial step to explore the role of competition in social and environmental entrepreneurial activities, particular, growth aspirations during the economic crisis.

In view of the global financial crisis, reduced demand for goods and services and difficulties in accessing credit leads to a significant number of business activities discontinue or shut down (Klapper and Love, 2011; Shane, 2011). Concomitantly, the negative effects stemming from the economic crisis not only deepen current social and environmental issues but also create new challenges (Quelch and Jocz, 2009). As a result, in such a context, socially and environmentally motivated entrepreneurs may perceive the low competition intensity in the market as a great need for them to grow and step in to resolve the unmet social and environmental issues. Thereby, their aspirations for growth could increase.

Hypothesis 7: Perceived competition positively mediates the positive relationship between an entrepreneur's pursuit of social goals and their growth aspirations.

Hypothesis 8: Perceived competition positively mediates the positive relationship between an entrepreneur's pursuit of environmental goals and their growth aspirations.

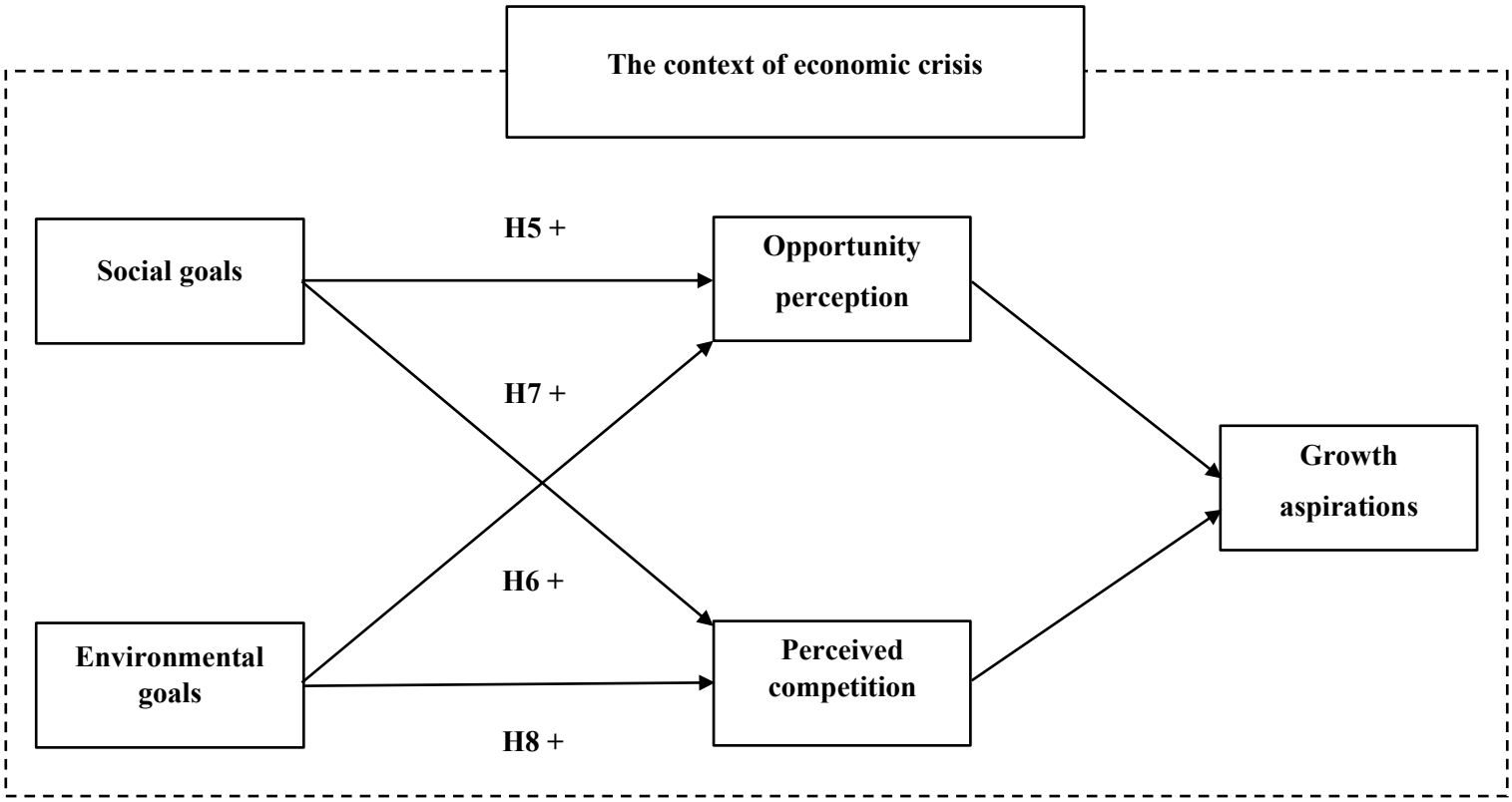


Figure 4.2 Research model 2 of chapter 4

4.3 Methodology

4.3.1 Sample and data

The global financial crisis (GFC) is the most severe worldwide economic crisis since the Great Depression that shattered the economic landscape in most countries across the world (International Monetary Fund (IMF) Economic Review, 2013). It began in the United States of America officially in December 2007 due to excessive risk-taking in the bank system along with the bursting of the housing bubble (Williams, 2010). Then it was followed by an international banking crisis and lasted until June 2009. According to the report from World Economic Situation and Prospects of the United Nation, World gross product (WGP) declined by 2.2% for 2009, the first actual contraction since the Second World War. In addition, the number of unemployed varied but increased notably in most economies. For example, in the United States of America, the unemployment rate has more than doubled from 4.9% to 10.1% since the beginning of the crisis in December 2007.

Global Entrepreneurship Monitor (GEM) provides a leading dataset for comparative research on entrepreneurship (Reynolds et al., 2005). Based on more than 180,000 interviews conducted between May and October in 54 countries, the special theme for 2009 GEM data investigated the impact of the global economic crisis on entrepreneurial activities. Therefore, the main data source for our analysis is derived from "Global Entrepreneurship Monitor's Adult Population Survey" (GEM APS) data of 2009 with over 150,000 individuals in over 50 countries (see Lepoutre et al., 2013 for the detailed description).

This research only analyses the growth aspirations of new ventures, and we focus on entrepreneurs running young businesses that are those who are currently operating new businesses for less than 42 months (3.5 years). We, therefore, consider employment growth aspirations referring to new organizations already in existence. In contrast, nascent entrepreneurs, who are currently in the process of starting a new firm, may find it difficult to respond to questions concerning growth aspirations. Also, young entrepreneurs provide good coverage of their current level of employment used in defining our dependent variable. The final dataset for our main analyses comprises information on 5,605 entrepreneurs running young businesses, embedded in 48 national contexts.

4.3.2 Dependent variables

On one hand, the growth aspirations of entrepreneurs vary over time. On the other hand, entrepreneurs' perceptions of the impact of the crises also change at different time frames: the crisis period versus the post-crisis period. It could be expected that long-term growth aspirations require entrepreneurs to make predictions for a longer-term time frame that goes beyond the current economic crisis whereas short-term growth aspirations reflect the immediate impact of the economic crisis. Thus, our study examines the different impacts on short-term versus long-term growth aspirations.

4.3.2.1 Short-term growth aspirations

As the economic crisis only takes place for a certain period of time, entrepreneurs' perception of opportunities and challenges arising from the impact of the crisis is often related to the short-term issues more than the long-term ones. Thereby, short-term growth aspirations might be the better indicator for this study. Hence, the main dependent variable in the model is *short-term growth aspirations*, which are measured through the extent of the current expectation of an entrepreneur for his/her business growth compared to one year ago. This is scored as a scale, taking the values of 1 in case of "Lower ", 2 in case of "Somewhat lower", 3 in case of "About the same", 4 in case of "Somewhat higher" and 5 in case of "Higher".

4.3.2.1 Long-term growth aspirations

Long-term growth aspirations are included as the second dependent variable, extending the analysis. It is calculated by the logarithmic difference between the expected levels of employment for five years since the time of the interview and the current level of employment at the time of the interview. Following Estrin et al. (2013), we combine the number of owner-managers reported by entrepreneurs with the number of employees to measure the amount of employment.

4.3.3 Individual-level predictors: The pursuit of social and environmental goals

We use the score of points allocated for social goals and environmental goals by the respondents as two individual-level independent variables which are collected from the following survey question:

"Organizations may have goals according to the ability to generate economic value, societal value, and environmental value. Please allocate a total of 100 points across these three categories as it pertains to your [venture's] goals.

How many points for economic value?

And how many points for societal value?

And, finally, how many points for environmental value?"

We acknowledge that respondents can have multiple value creation goals, and respondents' three potential value creation goals must sum to 100. We use the score of points that the respondent allocated for social goals as the first individual-level independent variable, which implies that the higher the score, the stronger the pursuit of social goals. Similarly, we use the score of points that the respondent allocated for environmental goals as the second individual-level independent variable, accordingly, the higher the score, the stronger the pursuit of environmental goals.

4.3.4 Individual-level mediators

4.3.4.1 Opportunity perception

The first mediator is opportunity perception which measures how the respondent perceives the extent of the growth opportunities for the business in the context of the economic crisis. We simplify the calculations treating this ordinal scale as a continuous variable, taking the values of 1 in the case of "Fewer business opportunities", 2 in the case of "Somewhat few business opportunities", 3 in the case of "No impact", 4 in the case of "Somewhat more business opportunities" and 5 in the case of "More business opportunities".

4.3.4.2 Perceived competition

The second mediator is perceived competition which measures how the respondent perceives competition intensity in the market through the number of business competitors offering the same products or services to their potential customers. As the data is collected in 2009 when the economic crisis occurred, we consider this answer as the respondent's perception of competition intensity in the context of the economic crisis. We treat this ordinal scale as a continuous variable, taking the values of 1 in the case of "No business competitors", 2 in the case of "Few business competitors" and 3 in the case of "Many business competitors".

4.3.5 Country-level predictor: The change in GDP growth

GDP growth is considered as a measure of the pace of economic development of a country that may influence the demand for goods and services generated by entrepreneurs as well as the available market opportunities for new entrepreneurs (Wennekers et al, 2005). Accordingly, the economic crisis is likely to reduce total demand in the market, reducing the revenue from goods and services of entrepreneurs. In the crisis period, if the change in the GDP growth between years is negative, it can be considered as the measure of the deepness of the crisis in a specific country. Countries that are more affected by the economic crisis should experience sharper declines in GDP growth. Thereby, the variation of GDP growth is used in prior research on the impact of the economic crisis (Peris-Ortiz et al., 2014; Vegetti and Adăscăliţei, 2017). Hence, in this study, we use a measure of "change in GDP growth" as the country-level predictor, which refers to the severity of the crisis's impact on the country. This variable is measured by comparing the change of GDP growth of countries before and during the economic crisis. Because the global financial crisis occurred from December 2007 to June 2009, comparing the data for 2008 - 2009 with earlier figures may pick up the impact of the crisis well. Therefore, this variable is measured by calculating the difference between the average GDP growth 2006 - 2007 with the average GDP growth 2008 - 2009 from the World Bank databank (higher values of this index indicate the country is stronger affected by the crisis).

4.3.6 Individual–level controls

4.3.6.1 Age

Age is commonly found to affect growth aspirations in previous research (Estrin et al., 2013; Minniti et al, 2005). Age also plays an important role in explaining social (Nga and Shamuganathan, 2010) and environmental entrepreneurship (Hörisch et al., 2017). Hence, we control for individuals' age and age in a quadratic form to capture any curvilinear effects since age may have an inverted-U effect on socially and environmentally oriented entrepreneurship (Brieger et al., 2020; Estrin et al., 2013).

4.3.6.2 Informal investor in the past 3 years

Individual experience of being an informal investor is likely to impact growth aspirations (Estrin et al., 2013). The importance of the individual experience of being an informal investor for socially oriented entrepreneurial activities is also emphasized in previous research (Meyskens et al., 2010). It is measured through an indicator from GEM is an informal investor in the past 3 years. Hence, we control for the informal investor in the past 3 years (1 = informal investor in the past 3 years and 0 = Otherwise).

4.3.6.3 Gender

There is a difference between male and female entrepreneurs in growth aspirations (Estrin et al., 2013) as well as social and environmental orientation (Brieger et al., 2019; Hörisch et al., 2017). Therefore, this study includes a dummy variable for gender (1=Female and 0=Male) as control variables.

4.3.6.4 Education

Past studies indicate that entrepreneurs' higher educational attainment may positively affect their aspirations to grow the business (Autio, 2005; Estrin et al., 2013). Moreover, compared to commercial counterparts, social or environmental oriented entrepreneurial activities attracts individuals having higher levels of education (Estrin et al., 2013). Thus, this study control for tertiary education level (1= respondent has a tertiary education; 0=otherwise).

4.3.6.5 Established business

While entrepreneurs can have some learning from owning another existing business, it may also raise the opportunity cost of a new involvement on a larger scale (Mickiewicz et al., 2017). In addition, being the owner of an established business is also associated with engaging in social entrepreneurship (Estrin et al., 2013). Therefore, we use established business as a control variable (1= Respondent has an existing business; 0=otherwise).

4.3.6.6 Discontinued business

Experience from existing previous entrepreneurial activities is likely to affect growth aspirations in subsequent entrepreneurial activities (Autio and Pathak, 2010). Hence, we control for the discontinued business. Based on two questions in the GEM survey, we construct this indicator and coded respondents as possessing experience in terms of discontinued business if they answered affirmatively that (a) they have sold, shut down, discontinued or quit the business in the past 12 months that they owned and managed, and (b) that this business continued to exist after the respondent departed from it.

4.3.7 Country-level controls

4.3.7.1 Economic development - GDPPC

Previous research provides evidence for the link between economic development and entrepreneurial activity of all types (Estrin et al., 2019 for a review). We follow earlier work that includes GDPPC as a control variable (Estrin et al., 2020) Thus, this study uses 2008 GDP (gross domestic product) per capita in purchasing power parity USD obtained from the World Bank to control for the level of development of the economy. We also include GDPPC squared to proxy for any nonlinear relationship.

4.3.7.2 Rule of law

We also control for a rule of law (in 2008) from the Polity IV Indicator database of efficient constraints on the arbitrary power of the executive branch of the government “Executive constraints”, which is found to influence growth aspirations in previous research (Estrin et al., 2013).

4.3.8 Data analysis

We test our hypotheses by using a series of multilevel models as our data contains individual-level observations grouped by country resulting in a hierarchical and clustered dataset. As we combine individual-level observations with country-level measures of cultural values and practices, applying multilevel analysis could allow us to avoid biases arising in single-level regressions. Specifically, whereas individual-level regressions increase the risk of Type 1 errors and biased standard errors as well as disregard the nature of culture as a collective concept, country-level regressions carry the risk of aggregation bias and ignore the nature of entrepreneurial activities as an individual behaviour (Hox et al., 2017; Peterson et al., 2012).

Group-mean centring is commonly recommended in research encompassing cross-level interaction effects (Aguinis et al., 2013). Applying grand-mean centering may create less accurate results, or even a lack of meaningful interpretation for the cross-level interaction effect (Enders and Tofighi, 2007) whereas group-mean centering leads to the most accurate estimates of within-group slopes and minimizes the possibility of finding spurious cross-level interaction effects (Hofmann and Gavin, 1998). Therefore, to appropriately test and interpret multilevel estimates as well as to alleviate potential level-2 estimation problems due to multicollinearity (Hofmann and Gavin, 1998), in our paper, we center the Level 1 predictors at country means (i.e., group-mean centering) and center the Level 2 predictor at sample means (i.e., grand-mean centering). We also use the variance inflation factor (VIF) to test for multicollinearity displayed in Table 4.5. Because VIF scores are below 5.0, this suggested that no multicollinearity is present among our country-level predictor variables (Hair et al., 1998).

The Intraclass Correlation (ICC), the proportion of total variance contributed by country-level variance components as frequently used in cross-cultural research, estimated how much of the variance in the dependent variables resided between countries (Hox et al., 2017). Significant between-group variance in the dependent variables requires multilevel analysis (Peterson et al., 2012). To see whether this applies in our study, we test the significance of country effects (random intercepts and fixed slopes) by the null model without any predictors or control variables. We find evidence for significant country-level variance (at $p < 0.001$) in addition to individual-level variance. The Intraclass Correlations (ICC)

estimated on the null models yielded that 9.5% of the variation in Short-term growth aspirations and 4.2% of the variation in Long-term growth aspirations resides at the country level (compared to the individual level).

The main research question is how the economic crisis (country level) impacts the growth aspirations of socially and environmentally oriented entrepreneurs (individual level), which reflect the relationships between variables that are measured at two different hierarchical levels (individual level and country level). Thereby, we employ multilevel data that have a different sample size at different levels. If we analyse these different-level variables at one single common level, such an approach will lead to both statistical and conceptual problems. Consequently, despite the estimated ICC(s) are rather low, multilevel analysis is the better approach for our study as "multilevel data must be described by multilevel theories" (Hox et al., 2017, p.6).

On one hand, to explain how the interplay between individual motivation and the impact of the economic crisis affects an entrepreneur's Short-term/Long-term growth aspirations (H1 - H4), we use multilevel random-effect modelling. More specifically, in our multilevel model, we allow only intercept to vary randomly across countries to account for the variance in the dependent variable. We do not allow the regression slopes associated with any of the independent variables to vary randomly.

To test the influence of both country–level and individual–level predictors as well as their interaction effects on Short-term/Long-term growth aspirations among young entrepreneurs, we proceed with a four-step estimation strategy. First, we add both individual–level (level 1) and country-level (level 2) controls in the model to estimate the proportion of variance explained by these controls alone (Model 1 of Tables 6 and 9). Prior to the addition of level 2 predictors (Model 6 of Tables 4.6 and 4.9), we include individual-level predictors: social and environmental goals (Models 2 - 4 of Tables 4.6 and 4.9). These two steps enabled us to estimate the proportion of variance explained by the individual–level and country-level predictors in turn after accounting for all control variables. Finally, we introduce cross-level interactions (Models 6 - 8 in Tables 4.6 and 4.9). For each model, along with estimates for the fixed part (estimates of coefficients) and random part (variance estimates), we also report model fit statistics (likelihood ratio tests).

A parallel multiple-mediator model using the MSEM (Multilevel structural equation modelling) in Stata is tested as the theoretical model proposes multiple indirect effects (H5 – H8). The results of these analyses are provided in Tables 4.7 and 4.8 alongside Tables 4.10 and 4.11 that include the dependent variable are Short-term Growth aspirations and Long-term Growth aspirations, respectively; the level 1 predictors are social and environmental goals; the level 1 mediators are opportunity perception and perceived competition; the level 2 moderator is changing GDP growth.

To test the indirect effects of individual-level predictors on Short-term/Long-term growth aspirations among entrepreneurs running young businesses, we proceed with a four-step estimation strategy. First, we add both individual–level (level 1) and country-level (level 2) control variables in the models (Model 1 in Tables 4.7 and 4.10). Second, we include individual-level predictors in the models (Model 2 in Tables 4.7 and 4.10). To examine the indirect effects of social and environmental goals on Short-term/Long-term growth aspirations via opportunity perception and perceived competition, we add two mediators into the models having the dependent variable (Model 3 in Tables 4.7 and 4.10). Finally, we add the country-level predictor (Model 4 in Tables 4.7 and 4.10).

4.4 Results

Table 4.1 shows the average values of the main variables of interest in this study for each country in our sample. Table 4.2 provides the descriptive statistics for all variables (controls, predictors, and the dependent variable) in this research. Table 4.3 and Table 4.4 display correlation matrices for the individual and country-level variables. Table 4.5 reports the Variance Inflation Factor (VIF) scores and tolerance values on the country–level controls and predictors. Tables 4.6 shows the effects of both country–level and individual–level predictors as well as their interaction effects on Short-term growth aspirations among young entrepreneurs. Tables 4.7 and 4.8 show the indirect effect of predictors on Short-term growth aspirations among young entrepreneurs via mediators. Tables 4.9 shows the effects of both country–level and individual–level predictors as well as their interaction effects on Long-term growth aspirations among young entrepreneurs. Tables 4.10 and 4.11 show the indirect effect of predictors on Long-term growth aspirations among young entrepreneurs via mediators.

Table 4.1 Country–level descriptive statistics

Country	Short-term growth aspirations	Long-term growth aspirations (log)	Social goals	Environ-mental goals	Opportunity perception	Perceived competition	Age	Informal investor	Female	Tertiary	Established business	Discontinued business	Δ GDP growth	Rule of law (log)	GDPPC
Algeria	3.21	0.78	23.85	8.64	2.78	2.52	32.59	16.33%	33.67%	38.78%	2.04%	11.22%	0.55	2	12715
Argentina	2.73	0.71	24.13	17.18	2.28	2.49	38.87	6.87%	46.56%	32.06%	1.53%	4.58%	9.46	2	18576
Belgium	3.04	0.42	25.81	20.13	2.62	2.57	37.38	20.75%	32.08%	56.60%	1.89%	5.66%	3.90	2	41171
Brazil	3.03	0.51	5.83	6.17	2.49	2.58	34.91	1.89%	54.25%	11.79%	0.00%	7.55%	2.53	2	13874
Chile	3.22	0.66	23.89	17.91	2.36	2.36	40.93	15.99%	45.92%	38.10%	1.02%	4.76%	4.63	2	18979
China	3.06	0.27	24.73	14.05	2.39	2.60	36.16	12.89%	47.73%	19.57%	0.48%	4.06%	3.95	1	7925
Colombia	3.14	0.95	20.31	16.33	2.31	2.55	39.78	10.99%	40.11%	34.62%	1.10%	4.40%	4.58	2	10602
Croatia	2.17	0.60	21.90	22.74	2.08	2.36	40.11	18.92%	24.32%	37.84%	0.00%	10.81%	7.93	2	22648
Denmark	2.46	0.37	32.37	16.29	2.58	2.37	45.00	7.32%	46.34%	43.90%	0.00%	4.88%	5.12	2	45866
Dominican Republic	2.93	0.68	21.86	19.13	2.75	2.38	36.90	10.20%	55.10%	41.50%	0.00%	8.84%	6.22	2	10653
Ecuador	3.05	0.58	16.66	15.09	2.38	2.69	39.82	7.46%	52.24%	17.91%	0.00%	5.97%	-0.17	1	9230
Finland	2.59	0.35	21.68	14.44	2.46	2.63	39.10	12.00%	44.00%	50.00%	0.00%	4.00%	8.31	2	42658
France	4.14	0.93	22.57	21.29	2.86	2.29	36.86	14.29%	42.86%	85.71%	0.00%	14.29%	3.75	2	37556
Germany	2.69	0.39	18.78	10.49	2.69	2.48	40.53	12.34%	32.47%	64.94%	4.55%	2.60%	5.77	2	40736
Greece	2.35	0.20	21.40	18.39	1.92	2.51	36.93	7.46%	34.33%	50.75%	0.00%	2.99%	6.78	2	31882
Guatemala	2.16	0.57	18.88	19.79	2.48	2.33	36.23	14.44%	48.89%	3.33%	3.33%	2.22%	3.94	2	6782
Hungary	2.12	0.30	6.95	5.97	2.55	2.53	41.95	17.46%	28.57%	53.97%	0.00%	1.59%	4.96	2	23782

Iran	3.00	0.66	26.86	15.06	2.09	2.48	31.69	18.75%	25.00%	43.75%	3.13%	0.00%	5.95	1	17360
Israel	2.84	0.79	18.78	8.56	2.42	2.45	36.51	17.78%	42.22%	62.22%	0.00%	8.89%	3.71	2	29057
Italy	3.02	0.37	31.98	17.77	2.44	2.54	37.81	8.33%	20.83%	22.92%	0.00%	2.08%	4.76	2	38075
Jamaica	2.42	0.40	26.34	17.07	2.08	2.42	36.56	13.45%	52.63%	7.60%	0.00%	2.92%	4.74	2	8594
Japan	3.61	0.36	34.72	25.28	3.06	2.39	44.78	11.11%	27.78%	50.00%	11.11%	0.00%	4.79	2	36278
Jordan	2.64	0.32	19.38	2.86	2.53	2.71	34.55	3.13%	21.88%	20.83%	1.04%	5.21%	1.78	1	9751
Korea	2.62	0.36	22.31	15.94	2.39	2.65	39.64	11.25%	18.75%	60.00%	0.00%	6.25%	3.55	2	28588
Latvia	2.00	0.40	24.95	12.14	1.94	2.55	35.82	20.75%	39.62%	46.23%	0.94%	2.83%	19.74	2	21499
Lebanon	3.34	0.39	16.14	3.26	2.36	2.60	35.01	2.42%	31.52%	40.00%	1.21%	6.06%	-4.13	2	12595
Malaysia	2.84	0.18	24.46	17.93	3.36	2.60	40.28	2.50%	30.00%	37.50%	2.50%	5.00%	4.28	2	20592
Morocco	2.61	0.71	35.84	6.12	2.56	2.59	33.92	2.16%	30.22%	5.04%	0.00%	7.19%	0.47	1	6118
Netherlands	3.10	0.30	31.86	14.43	2.61	2.37	42.78	6.17%	44.44%	6.17%	2.47%	2.47%	4.37	2	47710
Norway	3.12	0.23	29.17	12.58	2.74	2.42	42.18	16.39%	27.87%	63.93%	1.64%	1.64%	3.32	2	64526
Panama	3.54	0.57	17.91	13.36	2.64	2.58	38.52	13.43%	53.73%	35.82%	0.00%	1.49%	4.77	2	15114
Peru	3.30	0.59	18.97	15.16	2.33	2.56	36.65	11.96%	38.04%	30.43%	1.09%	4.35%	2.91	2	9349
Romania	1.64	0.81	26.80	17.80	1.96	2.72	38.12	16.00%	40.00%	48.00%	4.00%	8.00%	5.74	2	18967
Russia	2.15	0.53	2.71	7.57	1.97	2.86	39.29	8.57%	48.57%	91.43%	0.00%	5.71%	9.65	1	24228
Saudi Arabia	3.38	0.50	22.38	12.50	2.85	2.52	32.74	11.90%	2.38%	59.52%	2.38%	7.14%	0.22	0	46773
Serbia	1.96	0.26	10.42	11.56	1.96	2.54	39.98	2.08%	33.33%	29.17%	0.00%	0.00%	4.31	2	13533
Slovenia	2.96	0.55	31.11	22.36	2.52	2.40	37.00	12.73%	23.64%	40.00%	1.82%	0.00%	8.38	2	31092
South Africa	3.04	0.38	29.39	26.67	3.07	2.35	35.86	21.05%	42.11%	22.81%	0.00%	5.26%	4.66	2	12142
Spain	2.42	0.33	22.34	15.74	1.96	2.53	39.04	12.90%	38.02%	52.76%	0.84%	1.34%	5.29	2	33904
Switzerland	2.48	0.47	20.77	12.02	2.78	2.44	43.23	11.54%	46.15%	42.31%	0.00%	3.85%	4.08	2	56756

Tunisia	3.76	0.82	6.05	0.47	2.33	2.50	35.85	6.25%	25.00%	21.88%	0.00%	2.34%	2.34	1	9996
UAE	2.77	0.63	26.14	18.99	3.36	2.48	33.26	23.21%	16.96%	70.54%	2.68%	13.39%	7.54	1	69351
Uganda	3.17	0.52	13.66	4.01	2.31	2.61	31.73	21.77%	53.06%	5.22%	2.49%	6.35%	1.84	1	1497
United Kingdom	2.68	0.45	27.03	19.79	2.47	2.43	43.82	4.50%	36.75%	52.75%	0.75%	4.00%	4.87	2	38371
United States	2.94	0.54	21.11	14.11	2.52	2.54	46.82	15.56%	35.56%	76.67%	1.11%	4.44%	3.70	2	50350
Uruguay	3.53	0.44	20.15	16.61	2.75	2.51	37.13	8.20%	37.70%	26.23%	1.64%	4.92%	-0.39	2	15356
Venezuela	3.04	0.85	20.58	15.80	2.41	2.62	36.44	0.00%	64.71%	23.53%	0.00%	3.53%	8.28	1	18225
Yemen	2.91	0.35	15.21	13.75	1.81	2.64	29.54	4.17%	50.00%	0.00%	0.00%	0.00%	-0.50	1	4317

N = 5,605 observations, n = 48 countries

Short-term growth aspirations represent the average point for entrepreneurs' Short-term growth aspirations per country

Long-term growth aspirations (log) represent the average point for entrepreneurs' employment growth aspirations per country

Social goals represent the average point the respondents allocated for social value creation goals per country

Environmental goals represent the average point the respondents allocated for environmental value creation goals per country

Opportunity perception represents the average point the respondents allocated for opportunity perception per country

Perceived competition represents the average point the respondents allocated for the perceived competition per country

Age represents the average age of respondents per country

Informal investor (%) is the percentage of respondents who are informal investors in the last 3 years per country, is coded No = 0 and Yes = 1

Female (%) are the percentage of Female entrepreneurs per country, is coded Male entrepreneurs = 0 and Female entrepreneurs = 1

Tertiary (%) is the percentage of respondents who have complete higher education per country, is coded No = 0 and Yes = 1

Established business (%) the percentage of respondents who are owning an existing business per country, is coded Yes = 1 and No = 0

Discontinued business (%) the percentage of respondents who sold, shut down, discontinued or quit a business in the past 12 months that they owned and managed and this business continued its activities after the entrepreneur disengaged, is coded Yes = 1 and No = 0

Table 4.2 Descriptive statistics

Level 1 variables	Mean	SD	Min	Max
Short-term Growth aspirations	2.855	1.37	1	5
Long-term Growth aspirations (log)	0.484	0.768	-9.779	5.308
Social goals	21.362	18.655	0	100
Environmental goals	13.462	14.545	0	100
Opportunity perception	2.4	1.189	1	5
Perceived competition	2.521	0.632	1	3
Age	37.758	11.472	18	82
Informal investor in last 3 years	0.116	0.32	0	1
Female entrepreneurs	0.404	0.491	0	1
Tertiary education	0.353	0.478	0	1
Established business	0.011	0.104	0	1
Discontinued business	0.045	0.208	0	1

N = 5,605 observations

Level 2 variables	Mean	SD	Min	Max
Changing GDP growth	4.526	3.542	-4.13	19.742
Rule of law (log)	1.661	0.451	0	1.946
GDP per capita	25118.8	16644.5	1497.38	69351

n = 48 countries

Table 4.3 Individual–level correlations

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) Age	1											
(2) Informal investor in last 3 years	-0.011	1										
(3) Female entrepreneurs	-0.001	-0.060***	1									
(4) Tertiary education	0.053***	0.043**	-0.059***	1								
(5) Established business	0.008	0.091***	-0.037**	0.016	1							
(6) Discontinued business	-0.016	0.063***	-0.038**	-0.016	0.027*	1						
(7) Social goals	0.019	0.038+	0.026	0.084***	0.009	-0.015	1					
(8) Environmental goals	0.068***	0.031*	-0.016	0.063***	0.002	-0.001	0.198***	1				
(9) Opportunity perception	-0.064***	0.04**	-0.018	0.042**	0.038**	0.015	0.041**	0.036**	1			
(10) Perceived competition	-0.039**	-0.036**	-0.028*	-0.050***	-0.027*	0.011	-0.071***	-0.070***	-0.087***	1		
(11) Short-term Growth aspirations	-0.090***	0.014	-0.003	0.053***	0.016	0	0.049***	-0.006	0.313***	-0.086***	1	
(12) Long-term Growth aspirations (log)	-0.077***	0.012	-0.071***	0.055***	0.016	0.041**	0.012	0.037*	0.072***	-0.051***	0.129***	1

N = 5,605 observations

**** p<0.001, ** p<0.01, * p<0.05, + p<0.1*

Table 4.4 Country–level correlations

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Changing GDP growth	1								
(2) Rule of law (log)	0.288*	1							
(3) GDP per capita	0.208	0.195	1						
(4) Social goals	0.133	0.183	0.343*	1					
(5) Environmental goals	0.305*	0.372**	0.24	0.584***	1				
(6) Opportunity perception	-0.205	-0.002	0.394**	0.32*	0.217	1			
(7) Perceived competition	-0.08	-0.316+	-0.281+	-0.435*	-0.498***	-0.338+	1		
(8) Short-term Growth aspirations	-0.457**	-0.25+	-0.007	0.067	0.004	0.456**	-0.228	1	
(9) Long-term Growth aspirations (log)	0.015	-0.172	-0.219	-0.079	-0.018	-0.027	-0.08	0.265+	1

n = 48 countries

**** p<0.001, ** p<0.01, * p<0.05, + p<0.1*

Table 4.5 Multicollinearity test

	VIF[a]	Tolerance[b]
Age	1.044	0.958
Age squared	1.043	0.959
Informal investor in last 3 years	1.027	0.974
Female entrepreneurs	1.029	0.971
Tertiary education	1.135	0.881
Established business	1.014	0.986
Discontinued business	1.008	0.992
Rule of law (log)	1.222	0.818
GDP per capita	1.317	0.76
Social goals	1.03	0.971
Environmental goals	1.019	0.982
Opportunity perception	1.031	0.97
Perceived competition	1.021	0.98
Changing GDP growth	1.146	0.873
Mean VIF	1.077	

[a]VIF (Variance Inflation Factors) values greater than 5 signal high collinearity and values greater than 10 indicates reasons for concern due to collinearity among variables.

[b]Tolerance values less than 0.1 indicate collinearity among variables.

N = 5,605 observations

Table 4.6 Effects on Short-term Growth aspirations

	Controls		Level 1 predictors						Main effects		Cross-level interactions					
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7		Model 8	
	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE
Fixed effects																
Intercept	2.75***	(0.08)	2.77***	(0.08)	2.75***	(0.08)	2.76***	(0.08)	2.73***	(0.07)	2.73***	(0.07)	2.73***	(0.07)	2.73***	(0.07)
Level 1 Predictors																
Social goals			0.01***	(0.00)			0.01***	(0.00)	0.01***	(0.00)	0.01***	(0.00)	0.01***	(0.00)	0.01***	(0.00)
Environmental goals					0.003*	(0.00)	0.002	(0.00)	0.002	(0.00)	0.002	(0.00)	0.002	(0.00)	0.002	(0.00)
Level 1 Controls																
Age	-0.01***	(0.00)	-0.01***	(0.00)	-0.01***	(0.00)	-0.01***	(0.00)	-0.01***	(0.00)	-0.01***	(0.00)	-0.01***	(0.00)	-0.01***	(0.00)
Age squared	0.00*	(0.00)	0.00+	(0.00)	0.00*	(0.00)	0.00+	(0.00)	0.00+	(0.00)	0.00+	(0.00)	0.00+	(0.00)	0.00+	(0.00)
Informal investor	0.04	(0.06)	0.03	(0.06)	0.04	(0.06)	0.03	(0.06)	0.03	(0.06)	0.03	(0.06)	0.03	(0.06)	0.03	(0.06)
Female	-0.02	(0.04)	-0.03	(0.04)	-0.02	(0.04)	-0.03	(0.04)	-0.03	(0.04)	-0.03	(0.04)	-0.03	(0.04)	-0.03	(0.04)
Tertiary	0.30***	(0.04)	0.28***	(0.04)	0.30***	(0.04)	0.28***	(0.04)	0.28***	(0.04)	0.28***	(0.04)	0.28***	(0.04)	0.28***	(0.04)
Established business	0.16	(0.17)	0.16	(0.17)	0.16	(0.17)	0.16	(0.17)	0.16	(0.17)	0.16	(0.17)	0.17	(0.17)	0.17	(0.17)
Discontinued business	-0.06	(0.09)	-0.05	(0.09)	-0.06	(0.09)	-0.05	(0.09)	-0.05	(0.09)	-0.05	(0.09)	-0.05	(0.09)	-0.05	(0.09)
Level 2 Predictor																
Changing GDP growth									-0.06***	(0.02)	-0.06***	(0.02)	-0.06***	(0.02)	-0.06***	(0.02)
Level 2 Controls																
GDPPC	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)
Rule of law (ln)	-0.33*	(0.15)	-0.33*	(0.15)	-0.33*	(0.15)	-0.33*	(0.15)	-0.21	(0.14)	-0.21	(0.14)	-0.21	(0.14)	-0.21	(0.14)
Cross-level interactions																
Changing GDP growth*Social goals											-0.00	(0.00)			-0.00	(0.00)
Changing GDP growth*Environmental goals													0.00	(0.00)	0.00	(0.00)

Variance components								
Country level variance	0.171	0.170	0.171	0.170	0.125	0.125	0.125	0.125
Individual level variance	1.705	1.697	1.704	1.696	1.696	1.696	1.696	1.695
% ICC	9.099	9.103	9.117	9.116	6.867	6.868	6.869	6.869
Model fit								
Degrees of freedom	9	10	10	11	12	13	13	14
Country-level Pseudo R2 from Null model	5.52	6.08	5.52	6.08				
Individual-level Pseudo R2 from Null model	1.67	2.17	1.73	2.19				
Likelihood-ratio test (from Null model)	90.87 (9)	117.97 (10)	96.02 (10)	120.65 (11)				
Prob > Chi2	0.00	0.00	0.00	0.00				
Country-level Pseudo R2 from Model 1		0.58	0.00	0.58				
Individual-level Pseudo R2 from Model 1		0.47	0.06	0.53				
Likelihood-ratio test (from Model 1)		27.10 (1)	5.15 (1)	29.77 (2)				
Prob > Chi2		0.00	0.02	0.00				
Country-level Pseudo R2 from Model 4					26.47			
Individual-level Pseudo R2 from Model 4					0.00			
Likelihood-ratio test (from Model 4)					11.77 (1)			
Prob > Chi2					0.00			
Country-level Pseudo R2 from Model 5						0.00	0.00	0.00
Individual-level Pseudo R2 from Model 5						0.00	0.00	0.06
Likelihood-ratio test (from Model 5)						0.90 (1)	52.07 (1)	3.13 (2)
Prob > Chi2						0.35	0.15	0.21
AIC	18516	18491	18513	18490	18481	18482	18481	18481
Deviance	-9246	-9232	-9243	-9231	-9225	-9225	-9224	-9224

N = 5,453 observations, n = 48 countries; *** p<0.001, ** p<0.01, * p<0.05, + p<0.10

Table 4.7 Results of Multilevel structural equation modelling analysis – MSEM (Short-term growth aspirations)

	Model 1: Controls						Model 2: Adding level 1 Predictors					
	Model 1.1		Model 1.2		Model 1.3		Model 2.1		Model 2.2		Model 2.3	
	Dependent variable: Short-term growth aspirations		Mediator 1: Opportunity perception		Mediator 2: Perceived competition		Dependent variable: Short-term growth aspirations		Mediator 1: Opportunity perception		Mediator 2: Perceived competition	
	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE
Intercept	2.752***	(0.077)	2.324***	(0.056)	2.562***	(0.020)	2.765***	(0.077)	2.327***	(0.056)	2.558***	(0.020)
Level 1 controls												
Age	-0.008***	(0.002)	-0.006***	(0.001)	-0.001	(0.001)	-0.008***	(0.002)	-0.006***	(0.001)	-0.001	(0.001)
Age squared	0.000*	(0.000)	0.000**	(0.000)	0.000*	(0.000)	0.000+	(0.000)	0.000**	(0.000)	0.000*	(0.000)
Informal investor	0.043	(0.057)	0.137**	(0.051)	-0.070**	(0.027)	0.029	(0.056)	0.130*	(0.051)	-0.064*	(0.027)
Female entrepreneurs	-0.017	(0.037)	0.003	(0.033)	-0.042*	(0.017)	-0.027	(0.037)	0.001	(0.033)	-0.040*	(0.017)
Tertiary education	0.295***	(0.041)	0.092*	(0.036)	-0.047*	(0.019)	0.281***	(0.041)	0.088*	(0.036)	-0.043*	(0.019)
Established business	0.165	(0.171)	0.348*	(0.154)	-0.144+	(0.081)	0.161	(0.171)	0.348*	(0.153)	-0.142+	(0.081)
Discontinued business	-0.059	(0.086)	-0.021	(0.076)	0.034	(0.041)	-0.052	(0.086)	-0.020	(0.076)	0.033	(0.041)
Level 2 controls												
Rule of law (ln)	-0.334*	(0.149)	-0.143	(0.106)	-0.080*	(0.034)	-0.334*	(0.149)	-0.143	(0.106)	-0.080*	(0.034)
GDPPC	-0.000	(0.000)	0.000*	(0.000)	-0.000	(0.000)	-0.000	(0.000)	0.000*	(0.000)	-0.000	(0.000)
Level 1 predictors												
Social goals							0.005***	(0.001)	0.001	(0.001)	-0.002***	(0.000)
Environmental goals							0.002+	(0.001)	0.002+	(0.001)	-0.002*	(0.001)

Level 1 mediators		
Opportunity perception		
Perceived competition		
Level 2 predictor		
Changing GDP growth		
Model fit		
Degrees of freedom	39	45
Likelihood-ratio test (from M1)		55.95 (6)
Prob > Chi2		0.00
Likelihood-ratio test (from M2)		
Prob > Chi2		
Likelihood-ratio test (from M3)		
Prob > Chi2		
AIC	45642	45598
Deviance	-22785	-22757

Table 4.7 *continued*

	Model 3: Adding level 1 Mediators						Model 4: Adding level 2 Predictor					
	Model 3.1		Model 3.2		Model 3.3		Model 4.1		Model 4.2		Model 4.3	
	Dependent variable: Short-term growth aspirations		Mediator 1: Opportunity perception		Mediator 2: Perceived competition		Dependent variable: Short-term growth aspirations		Mediator 1: Opportunity perception		Mediator 2: Perceived competition	
	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE
Intercept	2.338***	(0.109)	2.327***	(0.056)	2.558***	(0.020)	2.310***	(0.105)	2.310***	(0.054)	2.558***	(0.020)
Level 1 controls												
Age	-0.007***	(0.002)	-0.006***	(0.001)	-0.001	(0.001)	-0.007***	(0.002)	-0.006***	(0.001)	-0.001	(0.001)
Age squared	0.000	(0.000)	0.000**	(0.000)	0.000*	(0.000)	0.000	(0.000)	0.000**	(0.000)	0.000*	(0.000)
Informal investor	-0.052	(0.055)	0.130*	(0.051)	-0.064*	(0.027)	-0.049	(0.055)	0.132**	(0.051)	-0.065*	(0.027)
Female entrepreneurs	-0.036	(0.036)	0.001	(0.033)	-0.040*	(0.017)	-0.034	(0.036)	0.002	(0.033)	-0.040*	(0.017)
Tertiary education	0.256***	(0.039)	0.088*	(0.036)	-0.043*	(0.019)	0.258***	(0.039)	0.090*	(0.036)	-0.043*	(0.019)
Established business	0.046	(0.164)	0.348*	(0.153)	-0.142+	(0.081)	0.046	(0.164)	0.347*	(0.153)	-0.142+	(0.081)
Discontinued business	-0.048	(0.083)	-0.020	(0.076)	0.033	(0.041)	-0.049	(0.083)	-0.020	(0.076)	0.033	(0.041)
Level 2 controls												
Rule of law (ln)	-0.305*	(0.139)	-0.143	(0.106)	-0.080*	(0.034)	-0.203	(0.130)	-0.088	(0.104)	-0.080*	(0.035)
GDPPC	-0.000	(0.000)	0.000*	(0.000)	-0.000	(0.000)	-0.000	(0.000)	0.000**	(0.000)	-0.000	(0.000)
Level 1 predictors												
Social goals	0.005***	(0.001)	0.001	(0.001)	-0.002***	(0.000)	0.005***	(0.001)	0.001	(0.001)	-0.002***	(0.000)
Environmental goals	0.002	(0.001)	0.002+	(0.001)	-0.002*	(0.001)	0.002	(0.001)	0.002+	(0.001)	-0.002*	(0.001)

Level 1 mediators								
Opportunity perception	0.336***	(0.015)		0.335***	(0.015)			
Perceived competition	-0.146***	(0.028)		-0.146***	(0.028)			
Level 2 predictor								
Changing GDP growth				-0.051**	(0.016)	-0.029*	(0.012)	0.000	(0.004)
Model fit								
Degrees of freedom			47			50		
Likelihood-ratio test (from M1)								
Prob > Chi2								
Likelihood-ratio test (from M2)			1732.84 (2)					
Prob > Chi2			0.00					
Likelihood-ratio test (from M3)						14.53 (1)		
Prob > Chi2						0.00		
AIC			43869			43860		
Deviance			-21890			-21883		

N = 5,605 observations, n = 48 countries; *** p<0.001, ** p<0.01, * p<0.05, + p<0.10

Table 4.8 Indirect effects of Social and Environmental goals on Short-term growth aspirations via Opportunity perception and Perceived competition

	Social goals			Environmental goals		
	Coeff.	SE	95% CI	Coeff.	SE	95% CI
Mediator 1: Opportunity perception	0.00005	0.0003	(-0.0002 ; 0.001)	0.00008	0.0004	(-0.00001 ; 0.002)
Mediator 2: Perceived competition	0.0002	0.0001	(0.00007 ; 0.0004)	0.0002	0.0001	(0.00003 ; 0.0004)

N = 5,605 observations, n = 48 countries

H1 – H2: The direct effects of the pursuit of social and environmental goals on growth aspirations

Models 2 and 3 in Table 4.6 show that the pursuit of social goals ($\beta = 0.01$, $p < 0.001$) and the pursuit of environmental goals ($\beta = 0.003$, $p < 0.05$) are positively related to Short-term growth aspirations. However, when including level 1 predictors in Model 4, only the pursuit of social goals has a positive effect on Short-term growth aspirations ($\beta = 0.01$, $p < 0.001$), but the pursuit of environmental goals does not. Hence, these results provide support for H1 and weak support for H2.

H3 – H4: The direct relationships of the pursuit of social and environmental goals on growth aspirations under the moderating effect of the severity of economic crisis (measured through Change in GDP growth)

Models 6 – 8 in Table 4.6 show that the severity of the economic crisis neither influences the relationship between social goals and short-term growth aspirations nor the one between environmental goals and growth aspirations. Therefore, both H3 and H4 are not supported.

H5 – H8: The indirect relationships of social and environmental goals on growth aspirations via opportunity perception and perceived competition in the context of economic crisis

We proposed an indirect effect of social and environmental goals on growth aspirations via opportunity perception and perceived competition (H5 – H8). We checked two preconditions for indirect (mediating) effects: (1) level 1 predictors (social and environmental goals) are related to level 1

mediators (opportunity perception and perceived competition) and (2) level 1 mediators are related to the dependent variable (growth aspirations).

Regarding the first mediator – opportunity perception, Models 2.2 in Table 4.7 show that environmental goals ($\beta = 0.002$, $p < 0.10$) are positively related to opportunity perception, but social goals are not. Model 3.1 in Table 4.7 shows that opportunity perception ($\beta = 0.34$, $p < .001$) has significant positive effects on short-term growth aspirations. Contrast with H5 and H6, Table 4.8 shows that the estimates for the effects of both social and environmental goals on short-term growth aspirations via opportunity perception have confidence intervals which include zero, suggesting that these are not significant.

Regarding the second mediator – perceived competition, Models 2.3 in Table 4.7 show that the pursuit of social goals ($\beta = -0.002$, $p < 0.001$) and environmental goals ($\beta = -0.002$, $p < 0.05$) are negatively related to perceived competition. Model 3.1 in Table 4.7 shows that perceived competition ($\beta = -0.15$, $p < .001$) has significant negative effects on growth aspirations. Table 4.8 shows that the pursuit of both social and environmental goals has positive indirect effects on Short-term growth aspirations via perceived competition. Particularly, compared to commercially oriented ones, socially and environmentally oriented entrepreneurs perceive lower competition, and then this perception positively relates to their short-term growth aspirations. The estimate for the indirect effect is 0.0003 and its 95% confidence interval does not include zero (0.0001; 0.0005), hence the effect is significant. Similarly, environmental goals have a positive indirect effect on short-term growth aspirations via perceived competition (0.0003, confidence interval: 0.00004; 0.0005). In summary, these results support for H7 and H8.

Table 4.9 Effects on Long-term Growth aspirations

	Controls		Level 1 predictors				Main effects				Cross-level interactions					
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7		Model 8	
	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE
Fixed effects																
Intercept	0.53***	(0.03)	0.53***	(0.03)	0.53***	(0.03)	0.53***	(0.03)	0.53***	(0.03)	0.53***	(0.03)	0.53***	(0.03)	0.53***	(0.03)
Level 1 Predictors																
Social goals			0.001	(0.00)			0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)
Environmental goals					0.002**	(0.00)	0.002**	(0.00)	0.002**	(0.00)	0.002**	(0.00)	0.002**	(0.00)	0.002**	(0.00)
Level 1 Controls																
Age	-0.01***	(0.00)	-0.01***	(0.00)	-0.01***	(0.00)	-0.01***	(0.00)	-0.01***	(0.00)	-0.01***	(0.00)	-0.01***	(0.00)	-0.01***	(0.00)
Age squared	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)
Informal investor	0.01	(0.04)	0.01	(0.04)	0.00	(0.03)	0.00	(0.04)	0.00	(0.04)	0.00	(0.04)	0.00	(0.04)	0.00	(0.04)
Female	-0.12***	(0.02)	-0.12***	(0.02)	-0.11***	(0.02)	-0.12***	(0.02)	-0.12***	(0.02)	-0.12***	(0.02)	-0.12***	(0.02)	-0.12***	(0.02)
Tertiary	0.12***	(0.03)	0.12***	(0.03)	0.12***	(0.03)	0.12***	(0.03)	0.12***	(0.03)	0.12***	(0.03)	0.12***	(0.03)	0.12***	(0.03)
Established business	0.08	(0.10)	0.08	(0.10)	0.08	(0.10)	0.08	(0.10)	0.08	(0.10)	0.08	(0.10)	0.08	(0.10)	0.08	(0.10)
Discontinued business	0.11*	(0.05)	0.11*	(0.05)	0.11*	(0.05)	0.11*	(0.05)	0.11*	(0.05)	0.11*	(0.05)	0.11*	(0.05)	0.11*	(0.05)
Level 2 Predictor																
Changing GDP growth									0.01	(0.01)	0.01	(0.01)	0.01	(0.01)	0.01	(0.01)
Level 2 Controls																
GDPPC	-0.00**	(0.00)	-0.00**	(0.00)	-0.00**	(0.00)	-0.00*	(0.00)	-0.00**	(0.00)	-0.00**	(0.00)	-0.00**	(0.00)	-0.00**	(0.00)
Rule of law (ln)	-0.07	(0.06)	-0.07	(0.06)	-0.07	(0.06)	-0.07	(0.06)	-0.08	(0.06)	-0.08	(0.06)	-0.08	(0.06)	-0.08	(0.06)
Cross-level interactions																
Changing GDP growth*Social goals											-0.00	(0.00)			-0.00	(0.00)
Changing GDP growth*Environmental goals													0.00	(0.00)	0.00	(0.00)

Variance components								
Country level variance	0.0218	0.0219	0.0218	0.0219	0.0215	0.0214	0.0215	0.0215
Individual level variance	0.555	0.555	0.554	0.554	0.554	0.554	0.554	0.554
% ICC	3.777	3.792	3.789	3.800	3.727	3.726	3.728	3.727
Model fit								
Degrees of freedom	9	10	10	11	12	13	13	14
Country-level Pseudo R2 from Null model	11.38	10.98	11.38	10.98				
Individual-level Pseudo R2 from Null model	1.77	1.80	1.95	1.95				
Likelihood-ratio test (from Null model)	83.83 (9)	86.29 (10)	92.67 (10)	94.12 (11)				
Prob > Chi2	0.00	0.00	0.00	0.00				
Country-level Pseudo R2 from Model 1		-0.46	0.00	-0.46				
Individual-level Pseudo R2 from Model 1		0.00	0.18	0.18				
Likelihood-ratio test (from Model 1)		2.46 (1)	8.84 (1)	10.29 (2)				
Prob > Chi2		0.12	0.00	0.01				
Country-level Pseudo R2 from Model 4					1.83			
Individual-level Pseudo R2 from Model 4					0.00			
Likelihood-ratio test (from Model 4)					0.71 (1)			
Prob > Chi2					0.40			
Country-level Pseudo R2 from Model 5						0.47	0.00	0.00
Individual-level Pseudo R2 from Model 5						0.00	0.00	0.00
Likelihood-ratio test (from Model 5)						0.06 (1)	0.08 (1)	0.14 (2)
Prob > Chi2						0.81	0.78	0.93
AIC	10461	10461	10454	10455	10456	10458	10458	10460
Deviance	-5218	-5217	-5214	-5213	-5213	-5213	-5213	-5213

N = 4,611 observations, n = 48 countries; *** p<0.001, ** p<0.01, * p<0.05, + p<0.10

Table 4.10 Results of Multilevel structural equation modelling analysis – MSEM (Long-term growth aspirations)

	Model 1: Controls						Model 2: Adding level 1 predictors					
	Model 1.1		Model 1.2		Model 1.3		Model 2.1		Model 2.2		Model 2.3	
	Dependent variable: Long-term growth aspirations		Mediator 1: Opportunity perception		Mediator 2: Perceived competition		Dependent variable: Long-term growth aspirations		Mediator 1: Opportunity perception		Mediator 2: Perceived competition	
	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE
Intercept	0.525***	(0.033)	2.324***	(0.056)	2.562***	(0.020)	0.526***	(0.033)	2.327***	(0.056)	2.558***	(0.020)
Level 1 controls												
Age	-0.005***	(0.001)	-0.006***	(0.001)	-0.001	(0.001)	-0.005***	(0.001)	-0.006***	(0.001)	-0.001	(0.001)
Age squared	-0.000	(0.000)	0.000**	(0.000)	0.000*	(0.000)	-0.000	(0.000)	0.000**	(0.000)	0.000*	(0.000)
Informal investor	0.008	(0.035)	0.137**	(0.051)	-0.070**	(0.027)	0.003	(0.035)	0.130*	(0.051)	-0.064*	(0.027)
Female entrepreneurs	-0.114***	(0.023)	0.003	(0.033)	-0.042*	(0.017)	-0.114***	(0.023)	0.001	(0.033)	-0.040*	(0.017)
Tertiary education	0.120***	(0.025)	0.092*	(0.036)	-0.047*	(0.019)	0.118***	(0.025)	0.088*	(0.036)	-0.043*	(0.019)
Established business	0.080	(0.101)	0.348*	(0.154)	-0.144+	(0.081)	0.076	(0.101)	0.348*	(0.153)	-0.142+	(0.081)
Discontinued business	0.108*	(0.054)	-0.021	(0.076)	0.034	(0.041)	0.107*	(0.054)	-0.020	(0.076)	0.033	(0.041)
Level 2 controls												
Rule of law (ln)	-0.068	(0.062)	-0.143	(0.106)	-0.080*	(0.034)	-0.068	(0.062)	-0.143	(0.106)	-0.080*	(0.034)
GDPPC	-0.000**	(0.000)	0.000*	(0.000)	-0.000	(0.000)	-0.000*	(0.000)	0.000*	(0.000)	-0.000	(0.000)
Level 1 predictors												
Social goals							0.001	(0.001)	0.001	(0.001)	-0.002***	(0.000)
Environmental goals							0.002**	(0.001)	0.002+	(0.001)	-0.002*	(0.001)

Level 1 mediators		
Opportunity perception		
Perceived competition		
Level 2 predictor		
Changing GDP growth		
Model fit		
Degrees of freedom	39	45
Likelihood-ratio test (from M1)		33.10 (6)
Prob > Chi2		0.00
Likelihood-ratio test (from M2)		
Prob > Chi2		
Likelihood-ratio test (from M3)		
Prob > Chi2		
AIC	37584	37560
Deviance	-18756	-18738

Table 4.10 *continued*

	Model 3: Adding level 1 Mediators						Model 4: Adding level 2 Predictor					
	Model 3.1		Model 3.2		Model 3.3		Model 4.1		Model 4.2		Model 4.3	
	Dependent variable: Long-term growth aspirations		Mediator 1: Opportunity perception		Mediator 2: Perceived competition		Dependent variable: Long-term growth aspirations		Mediator 1: Opportunity perception		Mediator 2: Perceived competition	
	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE
Intercept	0.587***	(0.063)	2.327***	(0.056)	2.558***	(0.020)	0.591***	(0.063)	2.310***	(0.054)	2.558***	(0.020)
Level 1 controls												
Age	-0.005***	(0.001)	-0.006***	(0.001)	-0.001	(0.001)	-0.005***	(0.001)	-0.006***	(0.001)	-0.001	(0.001)
Age squared	-0.000	(0.000)	0.000**	(0.000)	0.000*	(0.000)	-0.000	(0.000)	0.000**	(0.000)	0.000*	(0.000)
Informal investor	-0.003	(0.036)	0.130*	(0.051)	-0.064*	(0.027)	-0.003	(0.036)	0.132**	(0.051)	-0.065*	(0.027)
Female entrepreneurs	-0.126***	(0.024)	0.001	(0.033)	-0.040*	(0.017)	-0.127***	(0.024)	0.002	(0.033)	-0.040*	(0.017)
Tertiary education	0.110***	(0.026)	0.088*	(0.036)	-0.043*	(0.019)	0.109***	(0.026)	0.090*	(0.036)	-0.043*	(0.019)
Established business	0.075	(0.104)	0.348*	(0.153)	-0.142+	(0.081)	0.076	(0.104)	0.347*	(0.153)	-0.142+	(0.081)
Discontinued business	0.119*	(0.055)	-0.020	(0.076)	0.033	(0.041)	0.120*	(0.055)	-0.020	(0.076)	0.033	(0.041)
Level 2 controls												
Rule of law (ln)	-0.036	(0.063)	-0.143	(0.106)	-0.080*	(0.034)	-0.048	(0.064)	-0.088	(0.104)	-0.080*	(0.035)
GDPPC	-0.000**	(0.000)	0.000*	(0.000)	-0.000	(0.000)	-0.000**	(0.000)	0.000**	(0.000)	-0.000	(0.000)
Level 1 predictors												
Social goals	0.001	(0.001)	0.001	(0.001)	-0.002***	(0.000)	0.001	(0.001)	0.001	(0.001)	-0.002***	(0.000)
Environmental goals	0.002**	(0.001)	0.002+	(0.001)	-0.002*	(0.001)	0.002**	(0.001)	0.002+	(0.001)	-0.002*	(0.001)

Level 1 mediators										
Opportunity perception	0.033***	(0.010)			0.033***	(0.010)				
Perceived competition	-0.054**	(0.018)			-0.054**	(0.018)				
Level 2 predictor										
Changing GDP growth					0.006	(0.008)	-0.029*	(0.012)	0.000	(0.004)
Model fit										
Degrees of freedom			47				50			
Likelihood-ratio test (from M1)										
Prob > Chi2										
Likelihood-ratio test (from M2)			649.79 (2)							
Prob > Chi2			0.00							
Likelihood-ratio test (from M3)							5.77 (3)			
Prob > Chi2							0.12			
AIC			36914				36914			
Deviance			-18413				-18410			

N = 5,605 observations, n = 48 countries; *** p<0.001, ** p<0.01, * p<0.05, + p<0.10

Table 4.11 Indirect effects of Social and Environmental goals on Long-term Growth aspirations via Opportunity perception and Perceived competition

	Social goals			Environmental goals		
	Coeff.	SE	95% CI	Coeff.	SE	95% CI
Mediator 1: Opportunity perception	0.00004	0.00003	(-0.0002 ; 0.001)	0.00008	0.00004	(-0.00001 ; 0.002)
Mediator 2: Perceived competition	0.00008	0.00003	(0.00001 ; 0.0001)	0.00008	0.00004	(-0.000003 ; 0.0002)

N = 5,605 observations, n = 48 countries

Additional results:

In this study, we also distinguish between short-term versus long-term growth aspirations. In general, compared to results for short-term growth aspirations, the positive direct and indirect effects between the pursuit of social or environmental goals and growth aspirations become weaker and even non-significant in models using long-term growth aspirations.

Particularly, models 2 – 4 in Table 4.9 shows that while the pursuit of environmental goals has a significantly positive effect on long-term growth aspirations ($\beta = 0.002$, $p < 0.01$), social goals do not. Models 6 – 8 in Table 4.9 show that the severity of the economic crisis neither influences the relationship between social goals and long-term growth aspirations nor the one between environmental goals and growth aspirations.

Models 2.2 in Table 4.10 show that environmental goals ($\beta = 0.002$, $p < 0.10$) are positively related to opportunity perception, but social goals are not. Models 2.3 in Table 4.10 show that the pursuit of social goals ($\beta = -0.002$, $p < 0.001$) and environmental goals ($\beta = -0.002$, $p < 0.05$) are negatively related to perceived competition. Model 3.1 in Table 4.10 show opportunity perception ($\beta = 0.033$, $p < .001$) has significant positive effects on long-term growth aspirations while perceived competition ($\beta = -0.054$, $p < 0.001$) has significant negative effects on long-term growth aspirations.

Table 4.11 shows that only the indirect effect of social goals on long-term growth aspirations via perceived competition is significant whereas other indirect effects are insignificant. The estimate for the indirect effect is 0.0008 and its 95% confidence interval does not include zero (0.00001; 0.0001), hence the effect is significant.

One possible explanation for the difference in time horizon is that the long-term growth aspirations (measured in the 5-year horizon) extend well beyond the end of the crisis, thereby, the effects become very different than short-term growth aspiration (measured in the 1-year horizon) which more relate the impact of the economic crisis. Therefore, we encourage that future studies should continue to apply different time spans for measuring growth indicators and examine distinct effects of them.

Table 4.12 Summary of the results

Hypothesis	Result	Conclusion
Hypothesis 1: The entrepreneurs that pursue social goals (relative to economic goals) are the higher growth aspirations.	The pursuit of social goals has a positive effect on short-term growth aspirations	**H1 is supported**
	We find no evidence of the link between the pursuit of social goals and long-term growth aspirations	H1 is not supported
Hypothesis 2: The entrepreneurs that environmental social goals (relative to economic goals) are the higher growth aspirations.	The pursuit of environmental goals has a positive effect on short-term growth aspirations	**H2 is weakly supported**
	The pursuit of environmental goals has a positive effect on long-term growth aspirations	**H2 is supported**
Hypothesis 3: The severity of the economic crisis strengthens the positive association between the pursuit of social goals and an entrepreneur's growth aspirations.	We find no evidence of the moderating effect of the economic crisis on the positive relationship between the pursuit of social goals and short-term growth aspirations.	H3 is not supported
	We find no evidence of the moderating effect of the economic crisis on the positive relationship between the pursuit of social goals and long-term growth aspirations.	H3 is not supported
Hypothesis 4: The severity of the economic crisis strengthens the positive association between the pursuit of environmental goals and an entrepreneur's growth aspirations.	We find no evidence of the moderating effect of the economic crisis on the positive relationship between the pursuit of environmental goals and short-term growth aspirations.	H4 is not supported
	We find no evidence of the moderating effect of the economic crisis on the positive relationship between the pursuit of environmental goals and long-term growth aspirations.	H4 is not supported

Hypothesis 5: Opportunity perception positively mediates the positive relationship between an entrepreneur's pursuit of social goals and their growth aspirations.	We find no evidence of the mediating effect of opportunity perception on the positive between the pursuit of social goals and short-term growth aspirations.	H5 is not supported
	We find no evidence of the mediating effect of opportunity perception on the positive between the pursuit of social goals and long-term growth aspirations.	H5 is not supported
Hypothesis 6: Opportunity perception positively mediates the positive relationship between an entrepreneur's pursuit of environmental goals and their growth aspirations.	We find no evidence of the mediating effect of opportunity perception on the positive between the pursuit of environmental goals and short-term growth aspirations.	H6 is not supported
	We find no evidence of the mediating effect of opportunity perception on the positive between the pursuit of environmental goals and long-term growth aspirations.	H6 is not supported
Hypothesis 7: Perceived competition positively mediates the positive relationship between an entrepreneur's pursuit of social goals and their growth aspirations.	The pursuit of social goals has positive indirect effects on short-term growth aspirations via perceived competition	**H7 is supported**
	The pursuit of social goals has positive indirect effects on long-term growth aspirations via perceived competition	**H7 is supported**
Hypothesis 8: Perceived competition positively mediates the positive relationship between an entrepreneur's pursuit of environmental goals and their growth aspirations.	The pursuit of environmental goals has a positive indirect effect on short-term growth aspirations via perceived competition	**H8 is supported**
	We find no evidence of the mediating effect of perceived competition on the positive between the pursuit of environmental goals and long-term growth aspirations.	H8 is not supported

4.5 Discussion

By integrating the insight from the economic crisis literature with goal heterogeneity perspective into growth aspiration literature, the study advances our understanding of the link between the heterogeneity in pursued goals and entrepreneurs' employment growth aspirations. Besides contributions to social and environmental entrepreneurship, this study also advances the economic crisis literature through unpacking the mechanism by which the growth aspirations of socially and environmentally oriented entrepreneurs is shaped by the impact of the economic crisis.

4.5.1 Contributions to Social and Environmental Entrepreneurship

Our findings advance the understanding of the employment growth aspirations of entrepreneurs pursuing social and environmental goals. Notwithstanding the increasing interest in the research on social and environmental entrepreneurship (Gast et al., 2017 and Saebi et al., 2019; for general reviews), the understanding of employment growth aspirations of socially and environmentally oriented entrepreneurs are scarce. Aside from some important theoretical discussions (Andre´ and Pache, 2016; Battilana and Dorado 2010; Dees et al., 2004; Lumpkin et al., 2013; Shaw and Carter, 2007; Weerawardena and Mort, 2006; Zahra et al., 2008), we know little empirically about socially or environmentally oriented entrepreneur's employment growth aspirations, as well as why and under which context these entrepreneurs seek to grow their business.

First, this study contributes to providing empirical evidence to resolve the theoretical debate on the extent of growth aspirations of entrepreneurs pursuing social or environmental goals. Our findings provide evidence that socially or environmentally oriented entrepreneurs are more aspirational in terms of employment growth than purely commercially oriented entrepreneurs (Dees et al., 2004; Zahra et al., 2008). Whereas we find a stronger positive effect of the pursuit of social goals on growth aspirations, the positive link between the pursuit of environmental goals and growth aspirations appears to be weaker. These findings are at odds with the view that conceptually argues that entrepreneurs pursuing social and environmental goals have low aspirations to expand their business (Andre´ and Pache, 2016; Battilana and Dorado 2010; Lumpkin et al., 2013; Shaw and Carter, 2007; Weerawardena

and Mort, 2006). From there, the study also highlights the need for greater attention to be paid to research on growth aspirations of entrepreneurs pursuing social and environmental goals which seems to be scant while the understanding of growth aspirations of commercial entrepreneurs is established in the literature (Stam et al., 2012 for a review).

Second, this study highlights the difference in pursued goals as a source of heterogeneity in growth aspirations. We find that the pursuit of social goals only affects short-term growth aspirations while the pursuit of environmental goals has a positive link with both short-term and long-term growth aspirations. One potential explanation for these findings comes from the different nature of social and environmental issues. Social issues may not last perpetually. Unmet social needs (within a certain area) can be solved thoroughly, for instance, providing health care to disadvantaged people within a city. Accordingly, the growth aspirations of socially oriented entrepreneurs only persist at a certain time when social needs that their organizations care for are not satisfied yet. Once these social needs are resolved, the growth aspirations of those who are interested in these social needs may come to an end. In stark contrast, environmental issues can span geological time, often in hundreds or even thousands of years. Environmentally oriented entrepreneurial activities can only mitigate, but not eliminate, the negative impacts on the environment. In other words, environmental demands endure for a long time. Thereby, the growth aspirations of entrepreneurs pursuing environmental goals may relate to both short and long terms. Our findings contribute to shed light on how the inherent distinction in pursued goals (Schaefer et al., 2015; Schaltegger and Wagner, 2011; Thompson et al., 2011) shape the difference in certain entrepreneurial outcomes, namely different patterns of growth aspirations (e.g., short versus long terms). It showcases that integrating insight from the goal heterogeneity into research on entrepreneurship is a fruitful avenue for future research. Accordingly, entrepreneurship scholars might consider goal heterogeneity (e.g., economic versus social versus environmental goals) in research on the variances in the outcomes of social and environmental entrepreneurship.

Third, this study also deepens our understanding of growth-oriented social and environmental entrepreneurship by unpacking mechanisms of why entrepreneurs pursuing social and environmental goals aspire to employment growth. Opportunity perception is commonly considered as a critical part

not only in the entrepreneurship process (Bhave 1994; Shane and Venkataraman, 2000) but also in ambitious entrepreneurship (Hermans et al., 2015; Stam et al., 2009). Similarly, the ability to recognize competition intensity in the market would help entrepreneurs to successfully manage internal and external challenges and opportunities for their organizations. Our study finds that the pursuit of social and environmental goals has positive indirect effects on growth aspirations through the perception of the decrease of competitors in the market during the context of economic crisis while no significant mediating effects from opportunity perception in the crisis. One potential explanation for these outcomes is the crisis often occurs in a short time and the social needs arising from the crisis are likely to only exist in the period of the crisis, not last long and even disappear in the post-crisis periods. Hence, entrepreneurs pursuing social and environmental goals may recognize temporary opportunities for growth in crisis, but they do not desire to expand their business based on such temporary opportunities that seem to be risk and ambiguous.

In stark contrast, the lower competition intensity in the market during the economic crisis reflects the shortage of organisations providing similar products and services, leading to the increase of current social and environmental needs. Whereby, this poses a great need for socially and environmentally oriented entrepreneurs to grow their businesses so as to satisfy shortfalls and address social and environmental issues. Thereby, socially and environmentally oriented entrepreneurs more aspire to expand their business. Accordingly, our findings show the way of how socially and environmentally oriented entrepreneurs seek to grow their business in the context of the economic crisis that differs from their commercially oriented counterparts. While economically oriented entrepreneurs express strong growth aspirations despite the challenges of economic crisis (Giotopoulos et al., 2017a.; Giotopoulos et al., 2017b; Stephan et al., 2015), growth aspirations of socially and environmentally oriented entrepreneurs are only strong when they perceive the low competition intensity in the market during the context of economic crisis.

This study also encourages future research considering competition as an important antecedent for entrepreneurial activities in general and growth-oriented social and environmental entrepreneurship. The important roles of both opportunity and competition are pronounced in the entrepreneurship

literature (Bhave, 1994; Kirzner, 1973; Shane and Venkataraman, 2000). Yet, compared to a large number of studies on opportunities (Davidsson, 2015 for a review), research on the impact of competition on entrepreneurs is surprisingly scant (Abebe and Angriawan, 2014; Auh and Menguc, 2005; Estrada-Cruz et al, 2020; Martin and Javalgi, 2016; Mazzucato and Parris, 2015; O'Reilly III and Tushman, 2013; Whittaker et al., 2020), especially in the growth-oriented entrepreneurship literature.

4.5.2 Contributions to the economic crisis literature

This study also advances the economic crisis literature by examining how the economic crisis affects the relationship between the pursuit of social or environmental goals and growth aspirations. Unlike our expectation, the results do not support any moderating effects from the economic crisis (which we measured by the change in GDP growth). A possible explanation of this non-finding is that the economic crisis may generate not only positive impacts (such as the decrease in competition) but also negative ones (such as more difficulties in accessing external finance, and more generally in mobilizing needed resources) on social and environmental entrepreneurial activities, leading to a mixed effect on growth aspirations of entrepreneurs pursuing social and environmental goals. This result contributes a new perspective to the inconclusive discussion on the consequences of the economic crisis for corporate social and environmental responsibilities (CSR and CER) (Seles et al., 2018). Some scholars argue that the economic crises are a threat to social and environmental practices (Bansal et al., 2015; García-Pozo et al., 2015; Lenssen et al., 2010; Panwar et al., 2015; Yelkikalan and Köse, 2012; Seles et al., 2019; Yu and Lee, 2016) when they find a significant drop in numbers and the extent of CSR and CER projects in times of economic crisis (Karaibrahimoglu, 2010; Miras Rodríguez et al., 2014; Njoroge, 2009). On the contrary, others evaluate the economic crisis as an opportunity rather than a threat. In addition, the benefits of CSR and CER play an important role to help organizations come through the economic crisis successfully (Cornett et al., 2016; García-Benau et al., 2013; Glavopoulos et al., 2014; Green and Peloza, 2015; Jaakson et al., 2012; Sahut et al., 2012). Consequently, entrepreneurial activities towards social and environmental responsibility increase in such periods (Ducassy, 2013; Gallego-Álvarez et al., 2014; Giannarakis and Theotokas, 2011; Giallonardo, and Mulino, 2014; Miras Rodríguez et al.,

2013; Souto, 2009). While we acknowledge the differences between CSR/CER and social and environmental entrepreneurship (see Phillips et al., 2015; Saebi et al., 2019), some results in social/environmental entrepreneurship may provide new insights for CSR/CER and vice versa. Therefore, our study suggests that considering the consequences of the economic crisis as either opportunity or threats appears to oversimplify the nature of mixed impacts of economic crisis to CSR and CER. That may explain why we lack consensus results in prior literature. In addition, the findings of how perceived competition mediates the relationship between the pursuit of social and environmental goals and growth aspirations show that integrating insight from the perception-based literature, especially from the perceived competition, into research on the economic crisis, is a fruitful avenue for future research.

Furthermore, this study enriches the economic crisis literature by providing the important first insight into the potential role of socially and environmentally oriented entrepreneurs in the economic crisis. The economic crisis is not only detrimental to the economy but also has a profound effect on people (Kondo et al., 2008). The shrinkage or shutdown of businesses leads to increased unemployment (Choudhry et al., 2012; Chzhen, 2016; Pavlínek and Ženka, 2010; Perles-Ribes et al., 2016). The negative consequences of the economic crisis possibly exacerbate unsolved social and environmental problems and even generate new issues (Quelch and Jocz, 2009) such as poverty, inequality, industrial contamination, deforestation. In such a context, academic research has only recently begun to pay more attention to the relationship between the economic crisis and entrepreneurship (Doern et al., 2019). While general entrepreneurial activities contribute to economic recovery, social or environmental entrepreneurial activities holds additional promise to support the alleviation of social and environmental problems that worsen under the crisis conditions. Despite such a crucial role, research on the response of entrepreneurs pursuing social and environmental goals towards the crisis is scant, especially when compared to the body of literature on commercially oriented entrepreneurial activities in the economic crisis (Doern et al., 2019; Eggers, 2020 for reviews).

4.5.3 Practical implications

Our findings offer several implications for policymakers. *First,* policymakers should be keenly aware of the goals that entrepreneurs in their country are pursuing. The understanding of entrepreneurs' pursued goals would help them to envisage entrepreneurs' employment growth aspirations. Compared to their counterparts, those who pursue social and environmental goals more aspire to provide jobs for others, which will more contribute to society. Therefore, in order to nurture and leverage such high-growth-aspiring entrepreneurs, policymakers might consider further providing socially and environmentally oriented entrepreneurs both tangible (e.g., grants and subsidies) and intangible resources (supports related to social networks, efficient procedures or potential market).

Second, in the period of economic crises, instead of supporting all businesses, the government might consider more focusing on social and environmental entrepreneurship. That might make the allocation of public funds more selective and effective, at the same time, contribute to quicker economic recovery. This is because, on one hand, entrepreneurs pursuing social and environmental goals play a critical role in addressing social and environmental issues that especially become worse in the crisis. On the other hand, socially and environmentally oriented entrepreneurs, compared to conventional ones, are more ambitious in providing employment for others, especially when they perceive the decrease of competitors during the economic crisis.

4.5.4 Limitations and Directions for Future Research

Although our research provides contributions to the literature, it also has some limitations. *First,* our research differentiates value creation goals which an entrepreneur pursues through their ventures: economic, social, and environmental goals. We treat them as independent goals that entrepreneurs have to choose for their businesses. Nevertheless, the literature provides empirical evidence for a novel perspective on goal multiplicity (Stephan et al., 2019) in which entrepreneurs can pursue multiple goals simultaneously and even reap superior benefits. Therefore, future research may replicate our study by investigating how the interplay between goal multiplicity and contextual conditions affect growth aspirations.

Second, only one proxy is used to describe the severity of the economic crisis (changes in GDP growth of countries before and during the economic crisis). Thus, we suggest that future studies may consider generating a set of additional indicators that would reflect different aspects of the impact of the economic crisis on the economy (e.g., GDP growth, unemployment ratios, consumer price index (inflation), business confidence indexes, accumulated national debt, the currency strength, the central bank's interest rates, bankruptcy).

Third, there are various methods that socially and environmentally oriented entrepreneurs may use to scale their business (André and Pache, 2016; Bloom and Skolt, 2010; Bloom and Chatterji, 2009; Bradach, 2010; Dees et al., 2004; Hynes, 2009; Lyon and Fernandez, 2012) in order to contribute to society and the environment. Yet, this study focuses on one of the ways how all entrepreneurs can positively contribute to society is by providing employment for others. Accordingly, we only investigate socially and environmentally oriented entrepreneurs' aspirations for employment growth. Thus, we propose that future work may consider exploring other methods of scaling in social and environmental entrepreneurship.

4.6 Conclusion

This paper investigates how heterogeneity in pursued goals influence entrepreneurs' aspirations of growth. Moreover, this study looks into how entrepreneurs pursuing social or environmental goals respond to the impacts of the economic crisis. Our findings are the first to provide empirical evidence on positive relationships between the pursuit of social or environmental goals and growth aspirations, which contribute to social and environmental entrepreneurship. We also unpack this relationship through perception mechanism, particularly, the pursuit of social and environmental goals has positive indirect effects on growth aspirations through the perception of the low competition intensity in the market due to the impact of economic crisis. Additionally, this study enriches the economic crisis literature by offering the important first insight into the promising role that socially and environmentally oriented entrepreneurs may during the economic crisis.

Chapter 5 Discussion

Central to this thesis is the recognition that social and environmental entrepreneurial activities are fundamentally shaped by the interplay of individual and contextual factors. Besides, through a review of social and environmental entrepreneurship literature in terms of entrepreneurial motivations, consequences and contextualization, the thesis realizes research gaps in the existing studies. Consequently, to advance our understanding of social and environmental entrepreneurial activities, this thesis aims to answer two research questions:

Research question 1: *How is entrepreneurs' pursuit of social and environmental goals shaped by the interplay of entrepreneurial motivation and contexts?*

Research question 2: *How are entrepreneurial consequences shaped by the interplay of entrepreneurs' pursuit of social/environmental goals and contexts?*

Regarding the first research question, drawing on the literature of entrepreneurial motivation (opportunity/necessity motivation perspective) along with the integrating insights from cultural theory, the thesis analyses empirically the motivations of socially and environmentally oriented entrepreneurship. The first empirical study finds that the propensity of the pursuit of socio-environmental goals of necessity entrepreneurs is stronger than that of opportunity entrepreneurs. In addition, national culture plays important role in explaining the difference between opportunity and necessity entrepreneurs in pursuing socio-environmental goals. Norms in societies emphasized socially supportive culture and performance-based culture moderate this difference while cultural values in postmaterialism do not.

Regarding the second research question, through integrating the literature on innovation and employment growth aspirations into insights from institutional theory and economic crisis, the thesis studies empirically the consequences of socially and environmentally oriented entrepreneurship. The second and third empirical studies provide evidence that socially and environmentally oriented entrepreneurs, compared to their counterparts, economically oriented ones, are more innovative and growth-aspiring (especially, in the context of the economic crisis). These two empirical studies also find that contextual factors, in particular, three institutional pillars (regulatory, cognitive and normative institutions) alongside the change of economic condition, influence the consequences of social and

environmental entrepreneurship (innovation and growth aspirations). More specifically, while government activism (representing regulatory institutional pillar) and postmaterialism cultural values (representing cognitive institutional pillar) reinforce, socially supportive cultural norms (representing normative institutional pillar) attenuate the positive effect of the pursuit of social goals on the engagement of entrepreneurs in product innovation. In addition, the pursuit of social and environmental goals has positive indirect effects on growth aspirations through the perception of the decrease of competition in the market due to the impact of the economic crisis.

This chapter provides the overall conclusions related to the main goal of the thesis, which is individually developed and studied in each of the three empirical studies preceding this chapter. Also, the practical implications and limitations of the thesis are presented in this chapter.

5.1 Key contributions

This thesis advances our understanding of social and environmental entrepreneurship in several ways. *First,* our findings offer new insights into social and environmental entrepreneurship by shedding light on the motivation heterogeneity of socially and environmentally oriented entrepreneurs. The results in chapter 2 show that necessity entrepreneurs are socio-environmentally oriented than opportunity entrepreneurs. On one hand, our findings contrast with the widespread belief that socio-environmental oriented entrepreneurs are solely or mainly motivated by pro-social and pro-environmental concerns (Stephan and Drencheva, 2017 for a review). Accordingly, this research highlights the need for greater attention to be paid to new approaches in researching motivations of socially and environmentally oriented entrepreneurs (e.g., opportunity-necessity motivation), complementing the existing emphasis on pro-social and pro-environmental motivations (Hockerts, 2017; Hockerts and Wüstenhagen, 2010; Nga and Shamuganathan, 2010; Kirkwood and Walton, 2010; Miller et al., 2012; Ruskin et al., 2016). On the other hand, our findings challenge the taken-for-granted assumption that the pursuit of social and environmental goals appears to be more compatible with opportunity entrepreneurs than with necessity entrepreneurs, those who are forced to become entrepreneurs. Thus, we encourage future

studies to consider necessity motivation as an important antecedent for the research on social and environmental entrepreneurial activities.

Second, this thesis enriches our understanding of the potential consequences of social and environmental entrepreneurship by introducing innovation and employment growth aspirations. Notwithstanding the increasing interest in research on social and environmental entrepreneurship, our understanding of the consequences of pursuing social and environmental goals are under-developed (for reviews: Gast et al., 2017; Saebi et al., 2019). On one hand, our findings provide empirical evidence that socially and environmentally oriented entrepreneurs are innovative, which is emphasised in the theoretical literature (e.g., Dean and McMullen, 2007; Zahra et al., 2009), but overlooked in the existing empirical studies on social and environmental entrepreneurship. On the other hand, our findings contribute to resolving the theoretical debate on the growth aspirations of entrepreneurs pursuing social and environmental goals by providing empirical evidence that socially and environmentally oriented entrepreneurs are more growth-aspiring than their commercial counterparts. These findings are at odds with the view that conceptually argues that entrepreneurs pursuing social and environmental goals have low aspirations to expand their business (Andre´ and Pache, 2016; Battilana and Dorado 2010; Lumpkin et al., 2013; Shaw and Carter, 2007; Weerawardena and Mort, 2006). We hope this research can inspire future research to pay more attention to innovation and employment growth aspirations as the important consequences of social and environmental entrepreneurship.

Third, this thesis also advances our understanding of the interaction between individual and contextual factors on socially and environmentally oriented entrepreneurial activities. We respond to calls for more context-sensitive theory and research on entrepreneurship (Welter, 2011; Zahra and Wrights, 2011) and social and environmental entrepreneurship in particular (Zahra et al., 2008). Despite the emphasized important role of the context in socially and environmentally oriented entrepreneurship, as far as we know, no study investigating how the pursuit of social and environmental goals is shaped by the interplay between contextual conditions and entrepreneurial motivations that are typically considered as one important antecedent to predict social and environmental entrepreneurship. Likewise, our understanding of the role of context in the relationship between the pursuit of social and

environmental goals and their consequences is underdeveloped (for an exception Hoogendoorn et al., 2020). Our findings in all three empirical studies demonstrated that it is necessary to consider both individual-level and contextual-level factors in explaining socially and environmentally oriented entrepreneurial activities, in both the formation and post-formation stages. We also encourage future research to continue investigating the interplay of individual-level and contextual-level variables in social and environmental entrepreneurship, which is limited (Brieger and De Clercq, 2019; Brieger et al., 2019; Brieger et al., 2020; Estrin et al., 2016; Hechavarría, 2016; Hechavarría et al., 2017).

5.2 Practical implications

This thesis offers several implications for policymakers. *First,* policymakers commonly undervalue those who are forced to choose self-employment out of necessity compared to those who engage in entrepreneurship out of the business opportunity. However, our findings showed that necessity entrepreneurs not only are an important source for socially and environmentally oriented business activities but also play important role in addressing social and environmental issues in countries. In this sense, our study provides new insights for the governments to reconsider the role of necessity entrepreneurship. Policies should also attempt to minimize long-established and prevailing bias that portrays necessity entrepreneurs as less capable and less beneficial to society, which puts necessity entrepreneurs in a disadvantaged position compared to opportunity ones. Policymakers should explicitly encourage the pursuit of socio-environmental entrepreneurship by necessity entrepreneurs and ensure a fairer allocation of entrepreneurial resources to them.

Second, policymakers should be keenly aware of the goals that entrepreneurs, in their country, are pursuing. This is because understanding pursued goals would help them to predict the extent of the ambition of these entrepreneurs in innovation and growth. Ambitious entrepreneurship is considered not only to contribute more strongly to economic development but also to be more resilient in difficult circumstances (e.g., economic crisis). We find that compared to commercially oriented entrepreneurs, those who pursue social and environmental goals are more ambitious in innovative activities and employment growth.

Third, the thesis provides empirical evidence of the critical role of contexts in socially and environmentally oriented activities, in both formation and post-formation stages. This suggests that policymakers should ponder policy decisions and tailor measures depending on not only characteristics of entrepreneurs (e.g., motivations, pursued goals) but also contextual conditions where entrepreneurs are embedded.

5.3 Limitations

In spite of contributions and implications, our research also has several limitations. *First,* the thesis proposed a mechanism in which the difference in entrepreneurial motivations translates into the heterogeneity in goals, leading to differences in the entrepreneurial consequences. Yet, instead of testing mediating effects of this mechanism, the thesis studied this mechanism through two separate stages, the link between entrepreneurial motivation and goals and then the link between goals heterogeneity and entrepreneurial consequences. Therefore, future research may replicate our theoretical framework by investigating a mediating analysis between entrepreneurial motivation, goals heterogeneity and entrepreneurial consequences.

Second, we also note limitations associated with the fact that the number of national contexts represented in our sample is still limited although we draw on a rich multi-country dataset GEM which enables us to apply multilevel modelling. The limited number of countries included affects the statistical power of our analyses, which may be too low to identify all the expected effects. Thus, future research may replicate our findings based on a dataset including a greater variety of national contexts to explore potential linkages highlighted in our studies.

References

Abebe, M.A. and Angriawan, A., 2014. Organizational and competitive influences of exploration and exploitation activities in small firms. *Journal of Business Research*, *67*(3), pp.339-345.

Acs, Z.J. and Audretsch, D.B., 1988. Innovation in large and small firms: an empirical analysis. *The American economic review*, pp.678-690.

Acs, Z.J., Braunerhjelm, P., Audretsch, D.B. and Carlsson, B., 2009. The knowledge spillover theory of entrepreneurship. *Small business economics*, *32*(1), pp.15-30.

Adler, P.S. and Kwon, S.W., 2002. Social capital: Prospects for a new concept. *Academy of management review*, *27*(1), pp.17-40.

Aguinis, H., Gottfredson, R.K. and Culpepper, S.A., 2013. Best-practice recommendations for estimating cross-level interaction effects using multilevel modeling. *Journal of Management*, *39*(6), pp.1490-1528.

Ahlin, B., Drnovšek, M. and Hisrich, R.D., 2014. Entrepreneurs' creativity and firm innovation: the moderating role of entrepreneurial self-efficacy. *Small Business Economics*, *43*(1), pp.101-117.

Aidis, R., Estrin, S. and Mickiewicz, T.M., 2012. Size matters: entrepreneurial entry and government. *Small Business Economics*, *39*(1), pp.119-139.

Alvord, S.H., Brown, L.D. and Letts, C.W., 2004. Social entrepreneurship and societal transformation: An exploratory study. *The journal of applied behavioral science*, *40*(3), pp.260-282.

Amorós, J.E., Ciravegna, L., Mandakovic, V. and Stenholm, P., 2017. Necessity or opportunity? the effects of State fragility and economic development on entrepreneurial efforts. *Entrepreneurship Theory and Practice,* p.1042258717736857.

Andersson, F.O., 2018, June. Necessity Nonprofit Entrepreneurship: A Study of Extrinsically Motivated Nascent Nonprofit Entrepreneurs. *In Nonprofit Policy Forum (Vol. 9, No. 2, pp. 1-12)*. De Gruyter.

André, K. and Pache, A.C., 2016. From caring entrepreneur to caring enterprise: Addressing the ethical challenges of scaling up social enterprises. *Journal of Business Ethics,* 133(4), pp.659-675.

Ansari, S., Munir, K. and Gregg, T., 2012. Impact at the 'bottom of the pyramid': The role of social capital in capability development and community empowerment. *Journal of Management Studies*, *49*(4), pp.813-842.

Arenas, D., Hai, S. and De Bernardi, C., 2021. Coopetition Among Social Enterprises: A Three-Level Dynamic Motivated by Social and Economic Goals. *Nonprofit and Voluntary Sector Quarterly*, *50*(1), pp.165-185.

Audretsch, D.B. and Keilbach, M., 2007. The theory of knowledge spillover entrepreneurship. *Journal of Management studies*, *44*(7), pp.1242-1254.

Auh, S. and Menguc, B., 2005. Balancing exploration and exploitation: The moderating role of competitive intensity. *Journal of business research,* 58(12), pp.1652-1661.

Austin, J., Stevenson, H. and Wei-Skillern, J., 2006. Social and commercial entrepreneurship: same, different, or both?. *Entrepreneurship theory and practice*, *30*(1), pp.1-22.

Autio, E. and Acs, Z., 2010. Intellectual property protection and the formation of entrepreneurial growth aspirations. *Strategic Entrepreneurship Journal*, *4*(3), pp.234-251.

Autio, E. and Pathak, S., 2010. Entrepreneur's exit experience and growth aspirations. *Frontiers of Entrepreneurship Research*, *30*(5), p.2.

Autio, E., 2005. Global Entrepreneurship Monitor (GEM)-2005 Report on high-expectation entrepreneurship. *University of Illinois at Urbana-Champaign's Academy for Entrepreneurial Leadership Historical Research Reference in Entrepreneurship*.

Autio, E., Kenney, M., Mustar, P., Siegel, D. and Wright, M., 2014. Entrepreneurial innovation: The importance of context. *Research policy*, *43*(7), pp.1097-1108.

Autio, E., Pathak, S. and Wennberg, K., 2013. Consequences of cultural practices for entrepreneurial behaviors. *Journal of International Business Studies,* 44(4), pp.334-362.

Banbury, C.M. and Mitchell, W., 1995. The effect of introducing important incremental innovations on market share and business survival. *Strategic management journal*, *16*(S1), pp.161-182.

Bansal, P., Jiang, G.F. and Jung, J.C., 2015. Managing responsibly in tough economic times: strategic and tactical CSR during the 2008–2009 global recession. Long Range Planning, 48(2), pp.69-79.

Baregheh, A., Rowley, J. and Sambrook, S., 2009. Towards a multidisciplinary definition of innovation. *Management decision*.

Baron, R.A. and Tang, J., 2011. The role of entrepreneurs in firm-level innovation: Joint effects of positive affect, creativity, and environmental dynamism. *Journal of Business Venturing*, *26*(1), pp.49-60.

Battilana, J. and Dorado, S., 2010. Building sustainable hybrid organizations: The case of commercial microfinance organizations. *Academy of management Journal*, *53*(6), pp.1419-1440.

Battilana, J. and Lee, M., 2014. Advancing research on hybrid organizing–Insights from the study of social enterprises. *The Academy of Management Annals*, *8*(1), pp.397-441.

Baum, J.R., Locke, E.A. and Kirkpatrick, S.A., 1998. A longitudinal study of the relation of vision and vision communication to venture growth in entrepreneurial firms. *Journal of applied psychology*, *83*(1), p.43.

Baumol, P. and Panzar, J., 1982. Willig "Contestable Markets and the Theory of Industry Structure". New York.

Baumol, W.J., 1968. Entrepreneurship in economic theory. *The American economic review*, *58*(2), pp.64-71.

Baumol, W.J., 2010. *The microtheory of innovative entrepreneurship*. Princeton University Press.

Beach, W.W. and Kane, T., 2008. Methodology: Measuring the 10 economic freedoms. *2008 Index of economic freedom*, pp.39-55.

Bhave, M.P., 1994. A process model of entrepreneurial venture creation. *Journal of business venturing*, *9*(3), pp.223-242.

Bickel, R., 2007. *Multilevel analysis for applied research: It's just regression!*. Guilford Press.

Block, J. and Sandner, P., 2009. Necessity and opportunity entrepreneurs and their duration in self-employment: evidence from German micro data. *Journal of Industry, Competition and Trade, 9(2),* pp.117-137.

Block, J., Landgraf, A. and Semrau, T., 2019. The differential impact of societal cultural practices on part-time and full-time self-employment: A multi-level, multi-country study. *International Small Business Journal*, *37*(1), pp.43-68.

Block, J.H. and Wagner, M., 2010. Necessity and opportunity entrepreneurs in Germany: characteristics and earning s differentials. *Schmalenbach Business Review,* 62(2), pp.154-174.

Bloom, P. and Skloot, E., 2010. *Scaling social impact: New thinking.* Springer.

Bloom, P.N. and Chatterji, A.K., 2009. Scaling social entrepreneurial impact. *California management review,* 51(3), pp.114-133.

Bosma, N., Schutjens, V.A.J.M. and Stam, E., 2009. Determinants of early-stage entrepreneurial activity in European regions; distinguishing low and high ambition entrepreneurship. *Making the difference in local, regional and national economies: Frontiers in European entrepreneurship research*, pp.49-80.

Bosma, N., Wennekers, S. and Amorós, J.E., 2011. Extended report: Entrepreneurs and entrepreneurial employees across the globe. *London (GB): Global Entrepreneurship Research Association*.

Bowen, H.P. and De Clercq, D., 2008. Institutional context and the allocation of entrepreneurial effort. *Journal of International Business Studies*, *39*(4), pp.747-767.

Bradach, J., 2010. Foreword: from scaling organizations to scaling impact. *Scaling Social Impact: New Thinking, New York: Palgrave Macmillan,* pp. iv-xiv.

Brewer, J. and Gibson, S.W. eds., 2014. Necessity entrepreneurs: microenterprise education and economic development. *Edward Elgar Publishing.*

Brickson, S.L., 2007. Organizational identity orientation: The genesis of the role of the firm and distinct forms of social value. *Academy of management review*, *32*(3), pp.864-888.

Brieger, S.A. and De Clercq, D., 2019. Entrepreneurs' individual-level resources and social value creation goals: The moderating role of cultural context. *International Journal of Entrepreneurial Behavior & Research,* 25(2), pp.193-216.

Brieger, S.A., Bäro, A., Criaco, G. and Terjesen, S.A., 2020. Entrepreneurs' age, institutions, and social value creation goals: A multi-country study. *Small Business Economics*, pp.1-29.

Brieger, S.A., Terjesen, S.A., Hechavarría, D.M. and Welzel, C., 2019. Prosociality in business: A human empowerment framework. *Journal of Business Ethics*, *159*(2), pp.361-380.

Brünjes, J. and Diez, J.R., 2013. 'Recession push'and 'prosperity pull'entrepreneurship in a rural developing context. *Entrepreneurship & Regional Development,* 25(3-4), pp.251-271.

Bruton, G.D., Ahlstrom, D. and Li, H.L., 2010. Institutional theory and entrepreneurship: where are we now and where do we need to move in the future?. *Entrepreneurship theory and practice*, *34*(3), pp.421-440.

Burt, R.S., 2000. The network structure of social capital. Research in organizational behavior, 22, pp.345-423.

Cacciotti, G., and Hayton, J. C. (2017). National Culture and Entrepreneurship. The Wiley Handbook of Entrepreneurship, 401-422.

Carree, M.A. and Thurik, A.R., 2010. The impact of entrepreneurship on economic growth. In *Handbook of entrepreneurship research* (pp. 557-594). Springer, New York, NY.

Carsrud, A. and Brännback, M., 2011. Entrepreneurial motivations: what do we still need to know?. Journal of Small Business Management, 49(1), pp.9-26.

Carter, N.M., Gartner, W.B., Shaver, K.G. and Gatewood, E.J., 2003. The career reasons of nascent entrepreneurs. *Journal of Business Venturing,* 18(1), pp.13-39.

Choi, N. and Majumdar, S., 2014. Social entrepreneurship as an essentially contested concept: Opening a new avenue for systematic future research. *Journal of business venturing*, *29*(3), pp.363-376.

Choudhry, M.T., Marelli, E. and Signorelli, M., 2012. Youth unemployment rate and impact of financial crises. *International journal of manpower,* 33(1), pp.76-95.

Chzhen, Y., 2016. Perceptions of the economic crisis in Europe: do adults in households with children feel a greater impact?. *Social Indicators Research,* 127(1), pp.341-360.

Cliff, J.E., Jennings, P.D. and Greenwood, R., 2006. New to the game and questioning the rules: The experiences and beliefs of founders who start imitative versus innovative firms. *Journal of Business Venturing*, *21*(5), pp.633-663.

Colombelli, A., Krafft, J. and Vivarelli, M., 2016. To be born is not enough: the key role of innovative start-ups. *Small Business Economics*, *47*(2), pp.277-291.

Colquitt, J.A. and George, G., 2011. Publishing in AMJ—part 1: topic choice.

Corner, P.D. and Ho, M., 2010. How opportunities develop in social entrepreneurship. *Entrepreneurship theory and practice*, *34*(4), pp.635-659.

Cornett, M.M., Erhemjamts, O. and Tehranian, H., 2016. Greed or good deeds: An examination of the relation between corporate social responsibility and the financial performance of US commercial banks around the financial crisis. *Journal of Banking & Finance,* 70, pp.137-159.

Cowling, M., Liu, W. and Ledger, A., 2012. Small business financing in the UK before and during the current financial crisis. *International Small Business Journal,* 30(7), pp.778-800.

Czarnitzki, D. and Kraft, K., 2010. On the profitability of innovative assets. *Applied economics*, *42*(15), pp.1941-1953.

Dacin, M.T., Dacin, P.A. and Tracey, P., 2011. Social entrepreneurship: A critique and future directions. *Organization science*, *22*(5), pp.1203-1213.

Damanpour, F., 2010. An integration of research findings of effects of firm size and market competition on product and process innovations. *British Journal of Management*, *21*(4), pp.996-1010.

Damanpour, F., 2017. Organizational innovation. In *Oxford Research Encyclopedia of Business and Management*.

Danis, W.M., De Clercq, D. and Petricevic, O., 2011. Are social networks more important for new business activity in emerging than developed economies? An empirical extension. International Business Review, 20(4), pp.394-408.

Danneels, E., 2002. The dynamics of product innovation and firm competences. *Strategic management journal*, *23*(12), pp.1095-1121.

Datta, P.B. and Gailey, R., 2012. Empowering women through social entrepreneurship: Case study of a women's cooperative in India. *Entrepreneurship theory and Practice*, *36*(3), pp.569-587.

Davidsson, P. and Gordon, S.R., 2016. Much ado about nothing? The surprising persistence of nascent entrepreneurs through macroeconomic crisis. *Entrepreneurship Theory and Practice*, *40*(4), pp.915-941.

Davidsson, P. and Wiklund, J., 1997. Values, beliefs and regional variations in new firm formation rates. *Journal of Economic psychology*, *18*(2-3), pp.179-199.

Davidsson, P., 1995. Culture, structure and regional levels of entrepreneurship. *Entrepreneurship & Regional Development*, *7*(1), pp.41-62.

Davidsson, P., 2004. *Researching entrepreneurship* (Vol. 5). New York: Springer.

Davidsson, P., 2015. Entrepreneurial opportunities and the entrepreneurship nexus: A re-conceptualization. *Journal of business venturing,* 30(5), pp.674-695.

Davidsson, P., 2016. Researching entrepreneurship: Conceptualization and design (Vol. 33). Springer.

Davidsson, P., Delmar, F. and Wiklund, J., 2006. Entrepreneurship as growth; growth as entrepreneurship. *Entrepreneurship and the Growth of Firms*, *1*(2), pp.21-38.

De Clercq, D., Lim, D.S. and Oh, C.H., 2013. Individual–Level Resources and New Business Activity: The Contingent Role of Institutional Context. *Entrepreneurship Theory and Practice,* 37(2), pp.303-330.

Dean, T.J. and McMullen, J.S., 2007. Toward a theory of sustainable entrepreneurship: Reducing environmental degradation through entrepreneurial action. *Journal of business venturing*, *22*(1), pp.50-76.

Dees, J.G., Anderson, B.B. and Wei-Skillern, J., 2004. Scaling social impact. *Stanford social innovation review*, *1*(4), pp.24-32.

Delmar, F. and Wiklund, J., 2008. The effect of small business managers' growth motivation on firm growth: A longitudinal study. *Entrepreneurship theory and practice*, *32*(3), pp.437-457.

Delmar, F. and Wiklund, J., 2008. The effect of small business managers' growth motivation on firm growth: A longitudinal study. *Entrepreneurship Theory and Practice*, *32*(3), pp.437-457.

Dencker, J., Bacq, S.C., Gruber, M. and Haas, M., 2019, Reconceptualizing necessity entrepreneurship-a contextualized framework of entrepreneurial process under the condition of basic needs. *Academy of Management Review, (in press).*

Dencker, J.C., Gruber, M. and Shah, S.K., 2009. Pre-entry knowledge, learning, and the survival of new firms. *Organization Science,* 20(3), pp.516-537.

Desa, G. and Basu, S., 2013. Optimization or bricolage? Overcoming resource constraints in global social entrepreneurship. *Strategic entrepreneurship journal,* 7(1), pp.26-49.

Desa, G., 2010. Social entrepreneurship: snapshots of a research field in emergence. In *Values and opportunities in social entrepreneurship* (pp. 6-28). Palgrave Macmillan, London.

de Bruin, A., Shaw, E. and Lewis, K.V., 2017. The collaborative dynamic in social entrepreneurship. *Entrepreneurship & Regional Development*, *29*(7-8), pp.575-585.

Di Domenico, M., Haugh, H. and Tracey, P., 2010. Social bricolage: Theorizing social value creation in social enterprises. *Entrepreneurship theory and practice*, *34*(4), pp.681-703.

Di Domenico, M., Tracey, P. and Haugh, H., 2009. The dialectic of social exchange: Theorizing corporate—social enterprise collaboration. *Organization studies*, *30*(8), pp.887-907.

DiMaggio, P.J. and Powell, W.W. eds., 2012. *The new institutionalism in organizational analysis*. University of Chicago press.

Dittrich, K. and Duysters, G., 2007. Networking as a means to strategy change: the case of open innovation in mobile telephony. *Journal of product innovation management*, *24*(6), pp.510-521.

Doern, R., Williams, N. and Vorley, T., 2019. Special issue on entrepreneurship and crises: business as usual? An introduction and review of the literature. *Entrepreneurship & Regional Development*, *31*(5-6), pp.400-412.

Doherty, B., Haugh, H. and Lyon, F., 2014. Social enterprises as hybrid organizations: A review and research agenda. *International journal of management reviews*, *16*(4), pp.417-436.

Drencheva, A., Stephan, U., Patterson, M.G. and Topakas, A., 2021. Navigating interpersonal feedback seeking in social venturing: The roles of psychological distance and sensemaking. *Journal of Business Venturing*, *36*(4), p.106123.

Drucker, P.F., 1998. The discipline of innovation. *Harvard business review*, *76*(6), pp.149-157.

Ducassy, I., 2013. Does corporate social responsibility pay off in times of crisis? An alternate perspective on the relationship between financial and corporate social performance. *Corporate Social Responsibility and Environmental Management*, *20*(3), pp.157-167.

Dziallas, M. and Blind, K., 2019. Innovation indicators throughout the innovation process: An extensive literature analysis. *Technovation*, *80*, pp.3-29.

Edelman, L.F., Brush, C.G., Manolova, T.S. and Greene, P.G., 2010. Start-up motivations and growth intentions of minority nascent entrepreneurs. *Journal of Small Business Management*, *48*(2), pp.174-196.

Eesley, C.E., Eberhart, R.N., Skousen, B.R. and Cheng, J.L., 2018. Institutions and entrepreneurial activity: The interactive influence of misaligned formal and informal institutions. *Strategy Science,* 3(2), pp.393-407.

Efendic, A., Mickiewicz, T. and Rebmann, A., 2015. Growth aspirations and social capital: Young firms in a post-conflict environment. *International Small Business Journal*, *33*(5), pp.537-561.

Eggers, F., 2020. Masters of disasters? Challenges and opportunities for SMEs in times of crisis. *Journal of Business Research*, *116*, pp.199-208.

Elkington, J., 2004. Enter the triple bottom line in Henriques, A. and Richardson, J.(Eds); *The Triple Bottom Line: Does It All Add up.* Earth scan, UK.

Elkington, J., 2013. Enter the triple bottom line. In *The triple bottom line* (pp. 23-38). Routledge.

Enders, C.K. and Tofighi, D., 2007. Centering predictor variables in cross-sectional multilevel models: a new look at an old issue. *Psychological methods*, *12*(2), p.121.

Erumban, A.A. and De Jong, S.B., 2006. Cross-country differences in ICT adoption: A consequence of Culture?. *Journal of world business*, *41*(4), pp.302-314.

Estrada-Cruz, M., Rodriguez-Hernández, N., Verdú-Jover, A.J. and Gómez-Gras, J.M., 2020. The effect of competitive intensity on the relationship between strategic entrepreneurship and organizational results. *International Entrepreneurship and Management Journal,* pp.1-24.

Estrin, S., Korosteleva, J. and Mickiewicz, T., 2013. Which institutions encourage entrepreneurial growth aspirations?. *Journal of business venturing*, *28*(4), pp.564-580.

Estrin, S., Korosteleva, J. and Mickiewicz, T.M., 2019, July. Schumpeterian Entry: Innovation, Exporting, and Growth Aspirations of Entrepreneurs. In *Academy of Management Proceedings* (Vol. 2019, No. 1, p. 17308). Briarcliff Manor, NY 10510: Academy of Management.

Estrin, S., Mickiewicz, T. and Stephan, U., 2013. Entrepreneurship, social capital, and institutions: Social and commercial entrepreneurship across nations. *Entrepreneurship theory and practice,* 37(3), pp.479-504.

Estrin, S., Mickiewicz, T. and Stephan, U., 2016. Human capital in social and commercial entrepreneurship. *Journal of Business Venturing*, *31*(4), pp.449-467.

Estrin, S., Mickiewicz, T., Stephan, U. and Wright, M., 2019. Entrepreneurship in emerging markets. *The Oxford Handbook of Management in Emerging Markets*, pp.457-494.

Ettlie, J.E. and Reza, E.M., 1992. Organizational integration and process innovation. *Academy of management journal*, *35*(4), pp.795-827.

Feller, J., Parhankangas, A., Smeds, R. and Jaatinen, M., 2013. How companies learn to collaborate: Emergence of improved inter-organizational processes in R&D alliances. *Organization Studies*, *34*(3), pp.313-343.

Ferraro, F., Etzion, D. and Gehman, J., 2015. Tackling grand challenges pragmatically: Robust action revisited. *Organization Studies*, *36*(3), pp.363-390.

Fischer, R., 2006. Congruence and functions of personal and cultural values: Do my values reflect my culture's values?. *Personality and social psychology bulletin*, *32*(11), pp.1419-1431.

Fonseca, L. and Carvalho, F., 2019. The reporting of SDGs by quality, environmental, and occupational health and safety-certified organizations. *Sustainability*, *11*(20), p.5797.

Ford, J.A., Steen, J. and Verreynne, M.L., 2014. How environmental regulations affect innovation in the Australian oil and gas industry: going beyond the Porter Hypothesis. *Journal of Cleaner Production*, *84*, pp.204-213.

Freeman, J., Carroll, G.R. and Hannan, M.T., 1983. The liability of newness: Age dependence in organizational death rates. *American sociological review*, pp.692-710.

Freytag, A. and Thurik, R., 2007. Entrepreneurship and its determinants in a cross-country setting. *Journal of evolutionary Economics*, *17*(2), pp.117-131.

Fritsch, M. and Schroeter, A., 2009. *Are more start-ups really better? Quantity and quality of new businesses and their effect on regional development* (No. 2009, 070). Jena economic research papers.

Gallego-Álvarez, I., García-Sánchez, I.M. and da Silva Vieira, C., 2014. Climate change and financial performance in times of crisis. *Business Strategy and the Environment*, *23*(6), pp.361-374.

García-Benau, M.A., Sierra-Garcia, L. and Zorio, A., 2013. Financial crisis impact on sustainability reporting. *Management decision,* 51(7), pp.1528-1542.

García-Pozo, A., Sánchez-Ollero, J.L. and Ons-Cappa, M., 2016. ECO-innovation and economic crisis: a comparative analysis of environmental good practices and labour productivity in the Spanish hotel industry. *Journal of cleaner production,* 138, pp.131-138.

Gartner, W.B., 1985. A conceptual framework for describing the phenomenon of new venture creation. Academy of management review, 10(4), pp.696-706.

Gast, J., Gundolf, K. and Cesinger, B., 2017. Doing business in a green way: A systematic review of the ecological sustainability entrepreneurship literature and future research directions. *Journal of Cleaner Production*, *147*, pp.44-56.

Gedajlovic, E., Honig, B., Moore, C.B., Payne, G.T. and Wright, M., 2013. Social capital and entrepreneurship: A schema and research agenda. *Entrepreneurship Theory and Practice,* 37(3), pp.455-478.

Giacomin, O., Janssen, F., Guyot, J.L. and Lohest, O., 2011. Opportunity and/or necessity entrepreneurship? The impact of the socio-economic characteristics of entrepreneurs.

Giallonardo, L. and Mulino, M., 2014. CSR in a Model of Heterogeneous Firms, Financial Constraints and Economic Crisis. In *Corporate Social Responsibility in the Global Business World* (pp. 77-91). Springer, Berlin, Heidelberg.

Giannarakis, G. and Theotokas, I., 2011. The effect of financial crisis in corporate social responsibility performance. *International Journal of Marketing Studies*, *3*(1), p.2.

Giotopoulos, I., Kontolaimou, A. and Tsakanikas, A., 2017a. Drivers of high-quality entrepreneurship: what changes did the crisis bring about?. *Small Business Economics*, *48*(4), pp.913-930.

Giotopoulos, I., Kontolaimou, A. and Tsakanikas, A., 2017b. Antecedents of growth-oriented entrepreneurship before and during the Greek economic crisis. *Journal of Small Business and Enterprise Development.*

Glavopoulos, E., Bersimis, S., Georgakellos, D. and Sfakianakis, M., 2014. Investigating the factors affecting companies' attitudes towards CSR and CER during the fiscal crisis in Greece. *Journal of Environmental Planning and Management,* 57(11), pp.1612-1641.

Grant, R.M., 1996. Toward a knowledge-based theory of the firm. *Strategic management journal*, *17*(S2), pp.109-122.

Green, T. and Peloza, J., 2015. How did the recession change the communication of corporate social responsibility activities?. *Long Range Planning,* 48(2), pp.108-122.

Greer, C.R. and Lei, D., 2012. Collaborative innovation with customers: A review of the literature and suggestions for future research. *International Journal of Management Reviews*, *14*(1), pp.63-84.

Grube, L.E. and Storr, V.H., 2018. Embedded entrepreneurs and post-disaster community recovery. *Entrepreneurship & Regional Development*, *30*(7-8), pp.800-821.

Gupta, P., Chauhan, S., Paul, J. and Jaiswal, M.P., 2020. Social entrepreneurship research: A review and future research agenda. *Journal of Business Research*.

Guzmán, J. and Javier Santos, F., 2001. The booster function and the entrepreneurial quality: an application to the province of Seville. *Entrepreneurship & Regional Development,* 13(3), pp.211-228.

Hair, J.F., Anderson, R.E., Tatham, R.L. and Black, W.C., 1998. Multivariate Data Analysis Prentice Hall. *Upper Saddle River, NJ*, *730*.

Hall, J., Matos, S., Silvestre, B. and Martin, M., 2011. Managing technological and social uncertainties of innovation: the evolution of Brazilian energy and agriculture. *Technological Forecasting and Social Change*, *78*(7), pp.1147-1157.

Hatch, N.W. and Mowery, D.C., 1998. Process innovation and learning by doing in semiconductor manufacturing. *Management Science*, *44*(11-part-1), pp.1461-1477.

Haugh, H., 2005. A research agenda for social entrepreneurship. Social enterprise journal.

Hauser, J., Tellis, G.J. and Griffin, A., 2006. Research on innovation: A review and agenda for marketing science. *Marketing science*, *25*(6), pp.687-717.

Hayton, J.C. and Cacciotti, G., 2013. Is there an entrepreneurial culture? A review of empirical research. *Entrepreneurship & Regional Development*, *25*(9-10), pp.708-731.

Hébert, R.F. and Link, A.N., 1989. In search of the meaning of entrepreneurship. *Small business economics*, *1*(1), pp.39-49.

Hechavarria, D.M. and Reynolds, P.D., 2009. Cultural norms & business start-ups: the impact of national values on opportunity and necessity entrepreneurs. *International Entrepreneurship and Management Journal*, *5*(4), p.417.

Hechavarría, D.M. and Welter, C., 2015. Opportunity types, social entrepreneurship and innovation: Evidence from the panel study of entrepreneurial dynamics. *The International Journal of Entrepreneurship and Innovation*, *16*(4), pp.237-251.

Hechavarría, D.M., 2016a. Mother nature's son? The impact of gender socialization and culture on environmental venturing. *International Journal of Gender and Entrepreneurship,* 8(2), pp.137-172.

Hechavarría, D.M., 2016b. The impact of culture on national prevalence rates of social and commercial entrepreneurship. *International entrepreneurship and management journal,* 12(4), pp.1025-1052.

Hechavarría, D.M., Terjesen, S.A., Ingram, A.E., Renko, M., Justo, R. and Elam, A., 2017. Taking care of business: the impact of culture and gender on entrepreneurs' blended value creation goals. *Small Business Economics,* 48(1), pp.225-257.

Heisig, J.P. and Schaeffer, M., 2019. Why you should always include a random slope for the lower-level variable involved in a cross-level interaction. *European Sociological Review*, *35*(2), pp.258-279.

Henrekson, M. and Johansson, D., 2010. Gazelles as job creators: a survey and interpretation of the evidence. *Small business economics*, *35*(2), pp.227-244.

Herbst, J.M., 2019. Harnessing sustainable development from niche marketing and coopetition in social enterprises. *Business Strategy & Development*, *2*(3), pp.152-165.

Hermans, J., Vanderstraeten, J., Van Witteloostuijn, A., Dejardin, M., Ramdani, D. and Stam, E., 2015. Ambitious entrepreneurship: A review of growth aspirations, intentions, and expectations. *Entrepreneurial growth: Individual, firm, and region*.

Hessels, J., van Gelderen, M. and Thurik, R., 2008a. Drivers of entrepreneurial aspirations at the country level: the role of start-up motivations and social security. *International Entrepreneurship and Management Journal*, *4*(4), pp.401-417.

Hessels, J., Van Gelderen, M. and Thurik, R., 2008b. Entrepreneurial aspirations, motivations, and their drivers. *Small business economics*, *31*(3), pp.323-339.

Hockerts, K. and Wüstenhagen, R., 2010. Greening Goliaths versus emerging Davids—Theorizing about the role of incumbents and new entrants in sustainable entrepreneurship. *Journal of Business Venturing,* 25(5), pp.481-492.

Hockerts, K., 2017. Determinants of social entrepreneurial intentions. *Entrepreneurship Theory and Practice,* 41(1), pp.105-130.

Hofmann, D.A. and Gavin, M.B., 1998. Centering decisions in hierarchical linear models: Implications for research in organizations. *Journal of Management*, *24*(5), pp.623-641.

Honig, B., 2004. Entrepreneurship education: Toward a model of contingency-based business planning. *Academy of Management Learning & Education,* 3(3), pp.258-273.

Hoogendoorn, B., 2016. The prevalence and determinants of social entrepreneurship at the macro level. *Journal of Small Business Management*, *54*, pp.278-296.

Hoogendoorn, B., van der Zwan, P. and Thurik, R., 2020. Goal heterogeneity at start-up: are greener start-ups more innovative?. *Research Policy*, *49*(10), p.104061.

Hopp, C. and Stephan, U., 2012. The influence of socio-cultural environments on the performance of nascent entrepreneurs: Community culture, motivation, self-efficacy and start-up success. *Entrepreneurship & Regional Development*, *24*(9-10), pp.917-945.

Horbach, J., 2008. Determinants of environmental innovation—New evidence from German panel data sources. *Research policy*, *37*(1), pp.163-173.

Hörisch, J., Kollat, J. and Brieger, S.A., 2017. What influences environmental entrepreneurship? A multilevel analysis of the determinants of entrepreneurs' environmental orientation. *Small Business Economics*, *48*(1), pp.47-69.

House, R.J., Hanges, P.J., Javidan, M., Dorfman, P.W. and Gupta, V. eds., 2004. *Culture, leadership, and organizations: The GLOBE study of 62 societies.* Sage publications.

Hox, J.J., Moerbeek, M. and Van de Schoot, R., 2017. *Multilevel analysis: Techniques and applications.* Routledge.

Hynes, B., 2009. Growing the social enterprise–issues and challenges. *Social Enterprise Journal,* 5(2), pp.114-125.

ILO., 2015. *World Employment and Social Outlook*. International Labour Organization.

Inglehart, R. and Baker, W.E., 2000. Modernization, cultural change, and the persistence of traditional values. *American sociological review,* pp.19-51.

Inglehart, R. and Oyserman, D., 2004. Individualism, autonomy and self-expression: The human development syndrome.

Inglehart, R. and Welzel, C., 2010. Changing mass priorities: The link between modernization and democracy. *Perspectives on politics,* 8(2), pp.551-567.

Inglehart, R., 1997. *Modernization and postmodernization: Cultural, economic, and political change in 43 societies.* Princeton University Press.

Inglehart, R.F., 2008. Changing values among western publics from 1970 to 2006. *West european politics,* 31(1-2), pp.130-146.

Jaakson, K., Reino, A. and Mõtsmees, P., 2012. Is there a coherence between organizational culture and changes in corporate social responsibility in an economic downturn?. *Baltic Journal of Management.*

Javidan, M., 2004. Performance orientation. *Culture, leadership, and organizations: The GLOBE study of 62 societies,* Sage publications. pp.239-281.

Javidan, M., House, R.J., Dorfman, P.W., Hanges, P.J. and De Luque, M.S., 2006. Conceptualizing and measuring cultures and their consequences: a comparative review of GLOBE's and Hofstede's approaches. *Journal of international business studies*, *37*(6), pp.897-914.

Jepperson, R., 1991. Institutions, institutional effects, and institutionalism. *The new institutionalism in organizational analysis*, pp.143-163.

Karaibrahimoglu, Y.Z., 2010. Corporate social responsibility in times of financial crisis. *African journal of Business management*, *4*(4), p.382.

Kickul, J., Griffiths, M., Bacq, S. and Garud, N., 2018. Catalyzing social innovation: is entrepreneurial bricolage always good?. *Entrepreneurship & Regional Development*, *30*(3-4), pp.407-420.

Kim, W.C. and Mauborgne, R., 2014. *Blue ocean strategy, expanded edition: How to create uncontested market space and make the competition irrelevant*. Harvard business review Press.

Kirkwood, J. and Walton, S., 2010. What motivates ecopreneurs to start businesses?. *International Journal of Entrepreneurial Behavior & Research,* 16(3), pp.204-228.

Kirzner, I.M., 1973. *Competition and entrepreneurship.* University of Chicago press.

Klapper, L. and Love, I., 2011. The impact of the financial crisis on new firm registration. *Economics Letters*, *113*(1), pp.1-4.

Klewitz, J. and Hansen, E.G., 2014. Sustainability-oriented innovation of SMEs: a systematic review. *Journal of cleaner production*, *65*, pp.57-75.

Koellinger, P., 2008. Why are some entrepreneurs more innovative than others?. *Small Business Economics*, *31*(1), p.21.

Kohli, A.K. and Jaworski, B.J., 1990. Market orientation: the construct, research propositions, and managerial implications. *Journal of marketing,* 54(2), pp.1-18.

Kolvereid, L. and Isaksen, E.J., 2017. Expectations and achievements in new firms. *Journal of Small Business and Enterprise Development*.

Kondo, N., Subramanian, S.V., Kawachi, I., Takeda, Y. and Yamagata, Z., 2008. Economic recession and health inequalities in Japan: analysis with a national sample, 1986–2001. *Journal of Epidemiology & Community Health,* 62(10), pp.869-875.

Korosec, R.L. and Berman, E.M., 2006. Municipal support for social entrepreneurship. *Public administration review*, *66*(3), pp.448-462.

Laskovaia, A., Shirokova, G. and Morris, M.H., 2017. National culture, effectuation, and new venture performance: global evidence from student entrepreneurs. *Small Business Economics,* 49(3), pp.687-709.

Latham, G.P. and Pinder, C.C., 2005. Work motivation theory and research at the dawn of the twenty-first century. *Annu. Rev. Psychol.,* 56, pp.485-516.

Lee, C.K., Simmons, S.A., Amezcua, A., Lee, J.Y. and Lumpkin, G.T., 2020. Moderating Effects of Informal Institutions on Social Entrepreneurship Activity. *Journal of Social Entrepreneurship*, pp.1-26.

Lee, N., Sameen, H. and Cowling, M., 2015. Access to finance for innovative SMEs since the financial crisis. *Research policy*, *44*(2), pp.370-380.

Lee, R., Lee, J.H. and Garrett, T.C., 2017. Synergy effects of innovation on firm performance. *Journal of Business Research*.

Lenssen, G., Bevan, D., Fontrodona, J., Arevalo, J.A. and Aravind, D., 2010. The impact of the crisis on corporate responsibility: the case of UN global compact participants in the USA. *Corporate Governance: The international journal of business in society.*

Lepoutre, J., Justo, R., Terjesen, S. and Bosma, N., 2013. Designing a global standardized methodology for measuring social entrepreneurship activity: the Global Entrepreneurship Monitor social entrepreneurship study. *Small Business Economics*, *40*(3), pp.693-714.

Levie, J. and Autio, E., 2013. Growth and growth intentions. *White paper*, *1*, pp.159-183.

Levie, J. and Hart, M., 2013. The contribution of migrants and ethnic minorities to entrepreneurship in the United Kingdom. *The Dynamics of Entrepreneurship: Evidence from Global Entrepreneurship Monitor Data*, *101*.

Linnenluecke, M.K. and McKnight, B., 2017. Community resilience to natural disasters: the role of disaster entrepreneurship. *Journal of Enterprising Communities: People and Places in the Global Economy*.

Lumpkin, G.T. and Dess, G.G., 1996. Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of management Review*, *21*(1), pp.135-172.

Lumpkin, G.T., Moss, T.W., Gras, D.M., Kato, S. and Amezcua, A.S., 2013. Entrepreneurial processes in social contexts: how are they different, if at all?. *Small Business Economics*, *40*(3), pp.761-783.

Lyon, F. and Fernandez, H., 2012. Strategies for scaling up social enterprise: lessons from early years providers. *Social Enterprise Journal,* 8(1), pp.63-77.

Maas, G. and Herrington, M., 2006. Global entrepreneurship monitor: South African executive report 2006. *The UCT Centre for Innovation and Entrepreneurship.* Cape Town.

Mair, J. and Marti, I., 2006. Social entrepreneurship research: A source of explanation, prediction, and delight. *Journal of world business,* 41(1), pp.36-44.

Marques, C.S., Ferreira, J.J., Ferreira, F.A. and Lages, M.F., 2013. Entrepreneurial orientation and motivation to start up a business: evidence from the health service industry. *International Entrepreneurship and Management Journal*, *9*(1), pp.77-94.

Martin, S.L. and Javalgi, R.R.G., 2016. Entrepreneurial orientation, marketing capabilities and performance: the moderating role of competitive intensity on Latin American International new ventures. Journal of Business Research, 69(6), pp.2040-2051.

Mazzucato, M. and Parris, S., 2015. High-growth firms in changing competitive environments: the US pharmaceutical industry (1963 to 2002). *Small Business Economics*, *44*(1), pp.145-170.

McKelvie, A., Brattström, A. and Wennberg, K., 2017. How young firms achieve growth: reconciling the roles of growth motivation and innovative activities. *Small Business Economics*, *49*(2), pp.273-293.

McMullen, J.S., Bagby, D.R. and Palich, L.E., 2008. Economic freedom and the motivation to engage in entrepreneurial action. *Entrepreneurship Theory and Practice,* 32(5), pp.875-895.

Meyskens, M., Carsrud, A.L. and Cardozo, R.N., 2010. The symbiosis of entities in the social engagement network: The role of social ventures. *Entrepreneurship & Regional Development*, *22*(5), pp.425-455.

Meyskens, M., Robb–Post, C., Stamp, J.A., Carsrud, A.L. and Reynolds, P.D., 2010. Social ventures from a resource–based perspective: An exploratory study assessing global Ashoka fellows. *Entrepreneurship theory and practice*, *34*(4), pp.661-680.

Meyskens, M., Robb–Post, C., Stamp, J.A., Carsrud, A.L. and Reynolds, P.D., 2010. Social Ventures from a Resource–Based Perspective: An Exploratory Study Assessing Global Ashoka Fellows. *Entrepreneurship theory and practice,* 34(4), pp.661-680.

Mickiewicz, T., Nyakudya, F.W., Theodorakopoulos, N. and Hart, M., 2017. Resource endowment and opportunity cost effects along the stages of entrepreneurship. *Small Business Economics*, *48*(4), pp.953-976.

Miller, T.L., Grimes, M.G., McMullen, J.S. and Vogus, T.J., 2012. Venturing for others with heart and head: How compassion encourages social entrepreneurship. *Academy of management review,* 37(4), pp.616-640.

Minniti, M., Arenius, P. and Langowitz, N., 2005. The 2005 Global Entrepreneurship Monitor special topic report: Women in entrepreneurship. *Babson Park, MA: Center for Women's Leadership at Babson College*.

Miras Rodríguez, M.D.M., Escobar Pérez, B. and Carrasco Gallego, A., 2014. Are Spanish Listed Firms Betting on CSR during the Crisis? Evidence from the Agency Problem. Business and Management Research, 3 (1), 85-95.

Morales, C.E. and Holtschlag, C., 2013. Post materialist values and entrepreneurship: a multilevel approach. *International Journal of Entrepreneurial Behavior & Research,* 19(3), pp.266-282.

Nason, R.S. and Wiklund, J., 2018. An assessment of resource-based theorizing on firm growth and suggestions for the future. *Journal of management*, *44*(1), pp.32-60.

Nga, J.K.H. and Shamuganathan, G., 2010. The influence of personality traits and demographic factors on social entrepreneurship start up intentions. *Journal of business ethics*, *95*(2), pp.259-282.

Nicholls, A. ed., 2008. *Social entrepreneurship: New models of sustainable social change*. OUP Oxford.

Nicholls, A., 2010. The legitimacy of social entrepreneurship: Reflexive isomorphism in a pre–paradigmatic field. *Entrepreneurship theory and practice*, *34*(4), pp.611-633.

Njoroge, J., 2009. Effects of the global financial crisis on corporate social responsibility in multinational companies in Kenya. *Covalence Intern Analyst Papers*.

Nonaka, I., 1994. A dynamic theory of organizational knowledge creation. *Organization science*, *5*(1), pp.14-37.

O'Reilly III, C.A. and Tushman, M.L., 2013. Organizational ambidexterity: Past, present, and future. *Academy of management Perspectives,* 27(4), pp.324-338.

Palmer, T.B. and Short, J.C., 2008. Mission statements in US colleges of business: An empirical examination of their content with linkages to configurations and performance. *Academy of Management Learning & Education*, *7*(4), pp.454-470.

Panwar, R., Nybakk, E., Pinkse, J. and Hansen, E., 2015. Being good when not doing well: Examining the effect of the economic downturn on small manufacturing firms' ongoing sustainability-oriented initiatives. *Organization & Environment,* 28(2), pp.204-222.

Pathak, S. and Muralidharan, E., 2016. Informal institutions and their comparative influences on social and commercial entrepreneurship: The role of in-group collectivism and interpersonal trust. *Journal of Small Business Management*, *54*, pp.168-188.

Pavlínek, P. and Ženka, J., 2010. The 2008–2009 automotive industry crisis and regional unemployment in Central Europe. *Cambridge Journal of Regions, Economy and Society,* 3(3), pp.349-365.

Peredo, A.M. and McLean, M., 2006. Social entrepreneurship: A critical review of the concept. *Journal of world business*, *41*(1), pp.56-65.

Peris-Ortiz, M., de Borja Trujillo-Ruiz, F. and Hervás-Oliver, J.L., 2014. Business start-ups and innovation: the effect of the 2008 economic crisis. *In Entrepreneurship, innovation and economic crisis* (pp. 41-47). Springer, Cham.

Perles-Ribes, J.F., Ramón-Rodríguez, A.B., Rubia-Serrano, A. and Moreno-Izquierdo, L., 2016. Economic crisis and tourism competitiveness in Spain: permanent effects or transitory shocks?. *Current Issues in Tourism*, *19*(12), pp.1210-1234.

Perles-Ribes, J.F., Ramón-Rodríguez, A.B., Sevilla-Jiménez, M. and Moreno-Izquierdo, L., 2016. Unemployment effects of economic crises on hotel and residential tourism destinations: The case of Spain. *Tourism management*, *54*, pp.356-368.

Perrini, F., Vurro, C. and Costanzo, L.A., 2010. A process-based view of social entrepreneurship: From opportunity identification to scaling-up social change in the case of San Patrignano. *Entrepreneurship and regional development*, *22*(6), pp.515-534.

Peterman, N.E. and Kennedy, J., 2003. Enterprise education: Influencing students' perceptions of entrepreneurship. *Entrepreneurship theory and practice,* 28(2), pp.129-144.

Peterson, M.F., Arregle, J.L. and Martin, X., 2012. Multilevel models in international business research. *Journal of International Business Studies,* 43(5), pp.451–457.

Phillips, W., Lee, H., Ghobadian, A., O'Regan, N. and James, P., 2015. Social innovation and social entrepreneurship: A systematic review. Group & Organization Management, 40(3), pp.428-461.

Planko, J., Chappin, M.M., Cramer, J. and Hekkert, M.P., 2019. Coping with coopetition—Facing dilemmas in cooperation for sustainable development: The case of the Dutch smart grid industry. *Business strategy and the environment*, *28*(5), pp.665-674.

Puente, R., Cervilla, M.A., González, C.G. and Auletta, N., 2017. Determinants of the growth aspiration: a quantitative study of Venezuelan entrepreneurs. *Small Business Economics*, *48*(3), pp.699-726.

Quelch, J.A. and Jocz, K.E., 2009. Can corporate social responsibility survive recession?. *Leader to Leader*, *2009*(53), pp.37-43.

Rahmandad, H., 2012. Impact of growth opportunities and competition on firm-level capability development trade-offs. *Organization science,* 23(1), pp.138-154.

Rawhouser, H., Cummings, M. and Newbert, S.L., 2019. Social impact measurement: Current approaches and future directions for social entrepreneurship research. *Entrepreneurship Theory and Practice,* 43(1), pp.82-115.

Renko, M., 2013. Early challenges of nascent social entrepreneurs. *Entrepreneurship theory and practice*, *37*(5), pp.1045-1069.

Repenning, N.P. and Sterman, J.D., 2002. Capability traps and self-confirming attribution errors in the dynamics of process improvement. *Administrative Science Quarterly*, *47*(2), pp.265-295.

Reynolds, P., Bosma, N., Autio, E., Hunt, S., De Bono, N., Servais, I., Lopez-Garcia, P. and Chin, N., 2005. Global entrepreneurship monitor: Data collection design and implementation 1998–2003. *Small business economics*, *24*(3), pp.205-231.

Reynolds, P.D. and Curtin, R.T. eds., 2009. New firm creation in the United States: Initial explorations with the PSED II data set (Vol. 23). *Springer Science & Business Media.*

Reynolds, P.D. and Curtin, R.T., 2008. Business creation in the United States: Panel study of entrepreneurial dynamics II initial assessment. *Foundations and Trends® in Entrepreneurship,* 4(3), pp.155-307.

Reynolds, P.D., Bygrave, W.D., Autio, E. and Arenius, P., 2004. *GEM 2003 global report*. Babson Park, MA: Babson College.

Reynolds, P.D., Camp, S.M., Bygrave, W.D., Autio, E. and Hay, M., 2001. GEM Global Entrepreneurship Report, 2001 Summary Report. Kauffman Center for Entrepreneurial Leadership at the Ewing Marion Kauffman Foundation, Kansas City, KA, USA.

Rocha, V., Carneiro, A. and Varum, C.A., 2015. Entry and exit dynamics of nascent business owners. Small Business Economics, 45(1), pp.63-84.

Ruskin, J., Seymour, R.G. and Webster, C.M., 2016. Why create value for others? An exploration of social entrepreneurial motives. *Journal of Small Business Management,* 54(4), pp.1015-1037.

Saebi, T., Foss, N.J. and Linder, S., 2019. Social entrepreneurship research: Past achievements and future promises. *Journal of Management*, *45*(1), pp.70-95.

Sahut, J.M., Boulerne, S., Mili, M. and Teulon, F., 2012. What relation exists between CSR and longevity of firms?.

Schaefer, K., Corner, P.D. and Kearins, K., 2015. Social, environmental and sustainable entrepreneurship research: what is needed for sustainability-as-flourishing?. *Organization & environment,* 28(4), pp.394-413.

Schaltegger, S. and Wagner, M., 2011. Sustainable entrepreneurship and sustainability innovation: categories and interactions. *Business strategy and the environment*, *20*(4), pp.222-237.

Schaltegger, S., 2002. A framework for ecopreneurship. *Greener management international,* (38).

Schiederig, T., Tietze, F. and Herstatt, C., 2012. Green innovation in technology and innovation management–an exploratory literature review. *R&d Management*, *42*(2), pp.180-192.

Schilling, M.A., 2010. *Strategic management of technological innovation*. Tata McGraw-Hill Education.

Schøtt, T. and Jensen, K.W., 2016. Firms' innovation benefiting from networking and institutional support: A global analysis of national and firm effects. *Research Policy*, *45*(6), pp.1233-1246.

Schøtt, T. and Sedaghat, M., 2014. Innovation embedded in entrepreneurs' networks and national educational systems. *Small Business Economics*, *43*(2), pp.463-476.

Schumpeter, J., 1934. The theory of economic development. In *Joseph Alois Schumpeter* (pp. 61-116). Springer, Boston, MA.

Schumpeter, J.A., 1982. The theory of economic development: An inquiry into profits, capital, credit, interest, and the business cycle (1912/1934). *Transaction Publishers.–1982.–January*, *1*, p.244.

Schwartz, S., 2006. A theory of cultural value orientations: Explication and applications. *Comparative sociology*, *5*(2-3), pp.137-182.

Scott, W.R., 2005. Institutional theory: Contributing to a theoretical research program. *Great minds in management: The process of theory development*, *37*(2), pp.460-484.

Scott, W.R., 2007. *Institutions and organizations: Ideas, interests, and identities*. Sage publications.

Seles, B.M.R.P., de Sousa Jabbour, A.B.L., Jabbour, C.J.C. and Jugend, D., 2018. In sickness and in health, in poverty and in wealth?. *Journal of Organizational Change Management.*

Seles, B.M.R.P., de Sousa Jabbour, A.B.L., Jabbour, C.J.C., Latan, H. and Roubaud, D., 2019. Do environmental practices improve business performance even in an economic crisis? Extending the win-win perspective. *Ecological economics,* 163, pp.189-204.

Shane, S. and Venkataraman, S., 2000. The promise of entrepreneurship as a field of research. *Academy of management review*, *25*(1), pp.217-226.

Shane, S., 1993. Cultural influences on national rates of innovation. *Journal of business venturing*, *8*(1), pp.59-73.

Shane, S., 2011. The great recession's effect on entrepreneurship. *Economic Commentary*, (2011-04).

Shane, S., Locke, E.A. and Collins, C.J., 2003. Entrepreneurial motivation. *Human resource management review*, *13*(2), pp.257-279.

Shaver, K.G., Gartner, W.B., Crosby, E., Bakalarova, K. and Gatewood, E.J., 2001. Attributions about entrepreneurship: A framework and process for analyzing reasons for starting a business. *Entrepreneurship Theory and Practice,* 26(2), pp.5-28.

Shaw, E. and Carter, S., 2007. Social entrepreneurship. *Journal of small business and enterprise development.*

Shepherd, D.A., Parida, V. and Wincent, J., 2020. Entrepreneurship and poverty alleviation: the importance of health and children's education for slum entrepreneurs. *Entrepreneurship Theory and Practice,* p.1042258719900774.

Short, J.C., Moss, T.W. and Lumpkin, G.T., 2009. Research in social entrepreneurship: Past contributions and future opportunities. *Strategic entrepreneurship journal,* 3(2), pp.161-194.

Simón-Moya, V., Revuelto-Taboada, L. and Ribeiro-Soriano, D., 2016. Influence of economic crisis on new SME survival: reality or fiction?. *Entrepreneurship & Regional Development*, *28*(1-2), pp.157-176.

Smith, P.B., 2006. When elephants fight, the grass gets trampled: The GLOBE and Hofstede projects. *Journal of International Business Studies,* 37(6), pp.915-921.

Souto, B.F.F., 2009. Crisis and corporate social responsibility: threat or opportunity?. *International Journal of Economic Sciences and Applied Research*, *2*(1), pp.36-50.

Stadler, C., 2011. Process innovation and integration in process-oriented settings: The case of the oil industry. *Journal of Product Innovation Management*, *28*(s1), pp.44-62.

Stam, E. and Wennberg, K., 2009. The roles of R&D in new firm growth. *Small Business Economics*, *33*(1), pp.77-89.

Stam, E., Bosma, N. and van Witteloostuijn, A., 2012. *Ambitious entrepreneurship: a review of the state of the art*. Flemish Council for Science and Innovation.

Stam, E., Bosma, N., Van Witteloostuijn, A., De Jong, J., Bogaert, S., Edwards, N., and Jaspers, F., 2012. Ambitious entrepreneurship. *A Review of the Academic Literature and New Directions for Public Policy, Report for the Advisory Council for Science and Technology Policy (AWT) and the Flemish Council for Science and Innovation (VRWI)*.

Stam, E., Hartog, C., Van Stel, A. and Thurik, R., 2011. Ambitious entrepreneurship, high-growth firms and macroeconomic growth. *The dynamics of entrepreneurship: Evidence from global entrepreneurship monitor data*, pp.231-249.

Stam, E., Suddle, K., Hessels, J. and Van Stel, A., 2009. High-growth entrepreneurs, public policies, and economic growth. In *Public policies for fostering entrepreneurship* (pp. 91-110). Springer, New York, NY.

Stephan U, Hart M, Mickiewicz T, Drews CC. Understanding motivations for entrepreneurship. *BIS Research paper.* 2015 Feb;212.

Stephan, U. and Drencheva, A., 2017. The person in social entrepreneurship: A systematic review of research on the social entrepreneurial personality. *The Wiley handbook of entrepreneurship*, pp.205-229.

Stephan, U. and Pathak, S., 2016. Beyond cultural values? Cultural leadership ideals and entrepreneurship. *Journal of Business Venturing,* 31(5), pp.505-523.

Stephan, U. and Uhlaner, L.M., 2010. Performance-based vs socially supportive culture: A cross-national study of descriptive norms and entrepreneurship. *Journal of International Business Studies,* 41(8), pp.1347-1364.

Stephan, U., Andries, P. and Daou, A., 2019. Goal multiplicity and innovation: how social and economic goals affect open innovation and innovation performance. *Journal of Product Innovation Management*, *36*(6), pp.721-743.

Stephan, U., Hart, M. and Drews, C.C., 2015. Understanding motivations for entrepreneurship: A review of recent research evidence.

Stephan, U., Hart, M., Mickiewicz, T., Drews, C-C and Research, IFF. (2015), Understanding motivations for entrepreneurship. (BIS Research Paper*). Department for Business, Innovation and Skills.*

Stephan, U., Patterson, M., Kelly, C. and Mair, J., 2016. Organizations driving positive social change: A review and an integrative framework of change processes. *Journal of Management,* 42(5), pp.1250-1281.

Stephan, U., Uhlaner, L.M. and Stride, C., 2015. Institutions and social entrepreneurship: The role of institutional voids, institutional support, and institutional configurations. *Journal of International Business Studies,* 46(3), pp.308-331.

Stevens, R., Moray, N. and Bruneel, J., 2015. The social and economic mission of social enterprises: Dimensions, measurement, validation, and relation. *Entrepreneurship theory and practice*, *39*(5), pp.1051-1082.

Stevens, R., Moray, N. and Bruneel, J., 2015. The social and economic mission of social enterprises: Dimensions, measurement, validation, and relation. *Entrepreneurship theory and practice*, *39*(5), pp.1051-1082.

Stoner, C.R. and Fry, F.L., 1982. The entrepreneurial decision: dissatisfaction or opportunity?. *Journal of Small Business Management (pre-1986)*, *20*(000002), p.39.

Su, J., Zhai, Q. and Karlsson, T., 2017. Beyond red tape and fools: Institutional theory in entrepreneurship research, 1992–2014. *Entrepreneurship Theory and Practice*, *41*(4), pp.505-531.

Teece, D.J., Pisano, G. and Shuen, A., 1997. Dynamic capabilities and strategic management. *Strategic management journal*, *18*(7), pp.509-533.

Thai, M.T.T. and Turkina, E., 2014. Macro-level determinants of formal entrepreneurship versus informal entrepreneurship. *Journal of Business Venturing*, *29*(4), pp.490-510.

Thompson, N., Kiefer, K. and York, J.G., 2011. Distinctions not dichotomies: Exploring social, sustainable, and environmental entrepreneurship. In *Social and sustainable entrepreneurship* (pp. 201-229). Emerald Group Publishing Limited.

Thurik, A.R., Carree, M.A., Van Stel, A. and Audretsch, D.B., 2008. Does self-employment reduce unemployment?. *Journal of Business Venturing,* 23(6), pp.673-686.

Tobias, J.M., Mair, J. and Barbosa-Leiker, C., 2013. Toward a theory of transformative entrepreneuring: Poverty reduction and conflict resolution in Rwanda's entrepreneurial coffee sector. *Journal of Business Venturing*, *28*(6), pp.728-742.

Tsinopoulos, C., Sousa, C.M. and Yan, J., 2018. Process innovation: open innovation and the moderating role of the motivation to achieve legitimacy. *Journal of product innovation management*, *35*(1), pp.27-48.

Tushman, M.L. and O'Reilly III, C.A., 1996. Ambidextrous organizations: Managing evolutionary and revolutionary change. *California management review*, *38*(4), pp.8-29.

Tykkyläinen, S., 2019. Why social enterprises pursue growth? Analysis of threats and opportunities. *Social Enterprise Journal*.

Uhlaner, L. and Thurik, R., 2007. Postmaterialism influencing total entrepreneurial activity across nations. *Journal of Evolutionary Economics,* 17(2), pp.161-185.

Un, C.A. and Asakawa, K., 2015. Types of R&D collaborations and process innovation: The benefit of collaborating upstream in the knowledge chain. *Journal of Product Innovation Management*, *32*(1), pp.138-153.

Un, C.A., Cuervo-Cazurra, A. and Asakawa, K., 2010. R&D collaborations and product innovation. *Journal of Product Innovation Management*, *27*(5), pp.673-689.

UNEP, 2020. *Building a Greener Recovery: Lessons from the Great Recession.* Barbier, E.B. United Nations Environment Programme, Geneva.

Urbano, D., Aparicio, S. and Audretsch, D., 2019. Twenty-five years of research on institutions, entrepreneurship, and economic growth: what has been learned?. *Small Business Economics*, *53*(1), pp.21-49.

Van de Ven, A.H., Sapienza, H.J. and Villanueva, J., 2007. Entrepreneurial pursuits of self-and collective interests. *Strategic entrepreneurship journal*, *1*(3-4), pp.353-370.

Vegetti, F. and Adăscăliţei, D., 2017. The impact of the economic crisis on latent and early entrepreneurship in Europe. *International Entrepreneurship and Management Journal,* 13(4), pp.1289-1314.s

Vickers, I. and Lyon, F., 2014. Beyond green niches? Growth strategies of environmentally-motivated social enterprises. *International Small Business Journal,* 32(4), pp.449-470.

Volschenk, J., Ungerer, M. and Smit, E., 2016. Creation and appropriation of socio-environmental value in coopetition. *Industrial Marketing Management*, *57*, pp.109-118.

Weerawardena, J. and Mort, G.S., 2006. Investigating social entrepreneurship: A multidimensional model. *Journal of world business*, *41*(1), pp.21-35.

Welter, F. and Gartner, W.B., 2016. Advancing our research agenda for entrepreneurship and contexts. In *A research agenda for entrepreneurship and context*. Edward Elgar Publishing.

Welter, F., 2011. Contextualizing entrepreneurship—conceptual challenges and ways forward. *Entrepreneurship theory and Practice*, *35*(1), pp.165-184.

Welter, F., Baker, T., Audretsch, D.B. and Gartner, W.B., 2017. Everyday entrepreneurship—a call for entrepreneurship research to embrace entrepreneurial diversity.

Wennberg, K., Pathak, S. and Autio, E., 2013. How culture moulds the effects of self-efficacy and fear of failure on entrepreneurship. *Entrepreneurship & Regional Development*, *25*(9-10), pp.756-780.

Wennekers, S., Thurik, R., van Stel, A. and Noorderhaven, N., 2007. Uncertainty avoidance and the rate of business ownership across 21 OECD countries, 1976–2004. *Journal of Evolutionary economics*, *17*(2), pp.133-160.

Wennekers, S., Van Wennekers, A., Thurik, R. and Reynolds, P., 2005. Nascent entrepreneurship and the level of economic development. Small business economics, 24(3), pp.293-309.

Whittaker, D.H., Fath, B. and Fiedler, A., 2020. Open to competition? Competitive density and the growth of young New Zealand ventures. *Australian Journal of Management*, *45*(2), pp.343-358.

Williams, C.C. and Nadin, S., 2011. Beyond the commercial versus social entrepreneurship divide. *Social Enterprise Journal*.

Williams, C.C. and Nadin, S., 2012. Entrepreneurship in the informal economy: commercial or social entrepreneurs?. *International Entrepreneurship and Management Journal*, *8*(3), pp.309-324.

Williams, L., 2008. The mission statement: a corporate reporting tool with a past, present, and future. *The Journal of Business Communication (1973)*, *45*(2), pp.94-119.

Williams, M., 2010. Uncontrolled risk: lessons of Lehman Brothers and how systemic risk can still bring down the world financial system. McGraw Hill Professional.

Williams, N. and Williams, C.C., 2014. Beyond necessity versus opportunity entrepreneurship: some lessons from English deprived urban neighbourhoods. International Entrepreneurship and Management Journal, 10(1), pp.23-40.

Wong, P.K., Ho, Y.P. and Autio, E., 2005. Entrepreneurship, innovation and economic growth: Evidence from GEM data. *Small business economics*, *24*(3), pp.335-350.

Wu, J., 2012. Technological collaboration in product innovation: The role of market competition and sectoral technological intensity. *Research Policy*, *41*(2), pp.489-496.

Yelkikalan, N. and Köse, C., 2012. The effects of the financial crisis on corporate social responsibility. International Journal of Business and Social Science, 3(3).

Yitshaki, R. and Kropp, F., 2016. Motivations and opportunity recognition of social entrepreneurs. *Journal of Small Business Management,* 54(2), pp.546-565.

Yiu, D.W., Wan, W.P., Ng, F.W., Chen, X. and Su, J., 2014. Sentimental drivers of social entrepreneurship: A study of China's Guangcai (Glorious) Program. *Management and Organization Review*, *10*(1), pp.55-80.

Yli-Renko, H., Autio, E. and Sapienza, H.J., 2001. Social capital, knowledge acquisition, and knowledge exploitation in young technology-based firms. *Strategic management journal,* 22(6-7), pp.587-613.

York, J.G. and Venkataraman, S., 2010. The entrepreneur–environment nexus: Uncertainty, innovation, and allocation. *Journal of business Venturing,* 25(5), pp.449-463.

Yu, S. and Lee, N., 2016. Financial crisis, politically connected CEOs, and the performance of state-owned enterprises: Evidence from Korea. *Emerging Markets Finance and Trade*, *52*(9), pp.2087-2099.

Zahra, S.A. and Wright, M., 2011. Entrepreneurship's next act. *Academy of Management Perspectives*, *25*(4), pp.67-83.

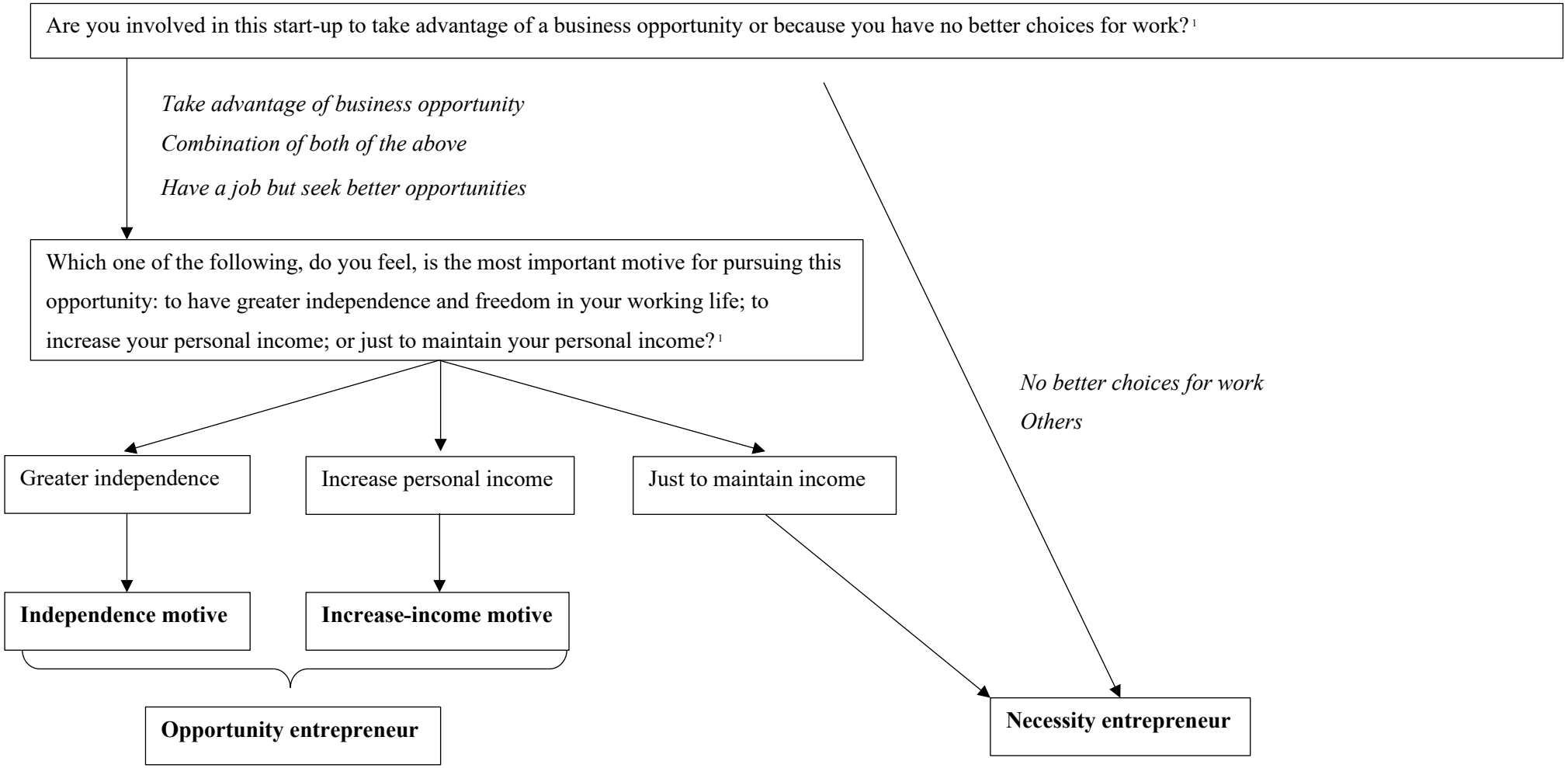
Zahra, S.A. and Wright, M., 2016. Understanding the social role of entrepreneurship. *Journal of Management Studies*, *53*(4), pp.610-629.

Zahra, S.A., Gedajlovic, E., Neubaum, D.O. and Shulman, J.M., 2009. A typology of social entrepreneurs: Motives, search processes and ethical challenges. *Journal of business venturing,* 24(5), pp.519-532.

Zahra, S.A., Rawhouser, H.N., Bhawe, N., Neubaum, D.O. and Hayton, J.C., 2008. Globalization of social entrepreneurship opportunities. *Strategic entrepreneurship journal*, *2*(2), pp.117-131.

Appendix

Appendix A – Chapter 2



[1]None of these, Don't know and Refused are treated as missing values.

Figure A.1 Questions for opportunity versus necessity entrepreneurs from the GEM

(The alternative indicator of individual-level predictor for robustness check 1)

Table A.1 Effects on the pursuit of socio-environmental goals (robustness check 1)

	Controls		Individual-level predictor		Main effects		Cross-level interactions							
							PM*NE		SSC* NE		PBC* NE		All interactions	
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7	
	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE
Fixed effects														
Constant	32.91***	(3.35)	31.99***	(3.40)	34.83***	(3.19)	34.85***	(3.19)	34.88***	(3.19)	34.83***	(3.19)	34.87***	(3.18)
Individual-level predictor														
Necessity entrepreneurs (NE)[a]			1.95*	(0.89)	1.96*	(0.89)	1.93*	(0.89)	1.66+	(0.90)	2.01*	(0.89)	1.72+	(0.91)
Individual-level controls														
Age	0.02	(0.04)	0.01	(0.04)	0.01	(0.04)	0.01	(0.04)	0.01	(0.04)	0.01	(0.04)	0.01	(0.04)
Age squared	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)
Informal investor	4.34**	(1.49)	4.45**	(1.49)	4.52**	(1.49)	4.51**	(1.49)	4.41**	(1.49)	4.50**	(1.49)	4.38**	(1.49)
Tertiary education	2.63**	(0.96)	2.91**	(0.97)	2.94**	(0.97)	2.94**	(0.97)	2.95**	(0.97)	2.93**	(0.97)	2.93**	(0.97)
Female entrepreneurs	1.95*	(0.88)	1.89*	(0.88)	1.83*	(0.88)	1.83*	(0.88)	1.86*	(0.88)	1.83*	(0.88)	1.87*	(0.88)
Country-level predictors														
Postmaterialism values (PM)					0.94*	(0.37)	0.91*	(0.37)	0.95**	(0.37)	0.95*	(0.37)	1.00**	(0.37)
Socially supportive culture (SSC)					13.52	(8.72)	13.48	(8.74)	15.67+	(8.78)	13.60	(8.72)	16.29+	(8.80)
Performance-based culture (PBC)					6.76	(6.76)	6.77	(6.77)	6.74	(6.75)	6.30	(6.81)	5.83	(6.81)
Country-level controls														
GDPPC	0.00	(0.00)	0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)
GDPPC squared	0.00	(0.00)	0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)
Rule of law	0.60	(1.88)	0.59	(1.90)	0.49	(1.87)	0.48	(1.87)	0.43	(1.86)	0.50	(1.86)	0.45	(1.86)
Cross-level interactions														
PM x NE							0.08	(0.13)					-0.10	(0.16)
SSC x NE									-6.19*	(3.11)			-7.41*	(3.58)
PBC x NE											1.20	(2.32)	2.30	(2.62)
Variance components														
Country-level variance	115.1		117.1		79.76		80.01		79.61		79.69		79.16	
Individual-level variance	567.8		566.8		566.8		566.7		566.1		566.7		565.9	
% ICC	16.86		17.12		12.34		12.37		12.33		12.33		12.27	

Model fit							
Degree of freedom	8	9	12	13	13	13	15
Country-level Pseudo R2 from M0[b]	-2.68	-4.46					
Individual-level Pseudo R2 from M0	0.73	0.91					
LR test (from M0)	22.36 (8)	27.15 (9)					
Prob > Chi2	0.00	0.00					
Country-level Pseudo R2 from M1 [b]		-1.74					
Individual-level Pseudo R2 from M1		0.18					
LR test (from M1)		4.79 (1)					
Prob > Chi2		0.03					
Country-level Pseudo R2 from M2 [b]			31.89				
Individual-level Pseudo R2 from M2			0.00				
LR test (from M2)			9.60 (3)				
Prob > Chi2			0.02				
Country-level Pseudo R2 from M3 [b]				-0.31	0.19	0.09	0.75
Individual-level Pseudo R2 from M3				0.02	0.12	0.02	0.16
LR test (from M3)				0.42 (1)	3.97 (1)	0.27 (1)	4.79 (3)
Prob > Chi2				0.52	0.05	0.61	0.19
AIC	28958	28956	28952	28953	28950	28954	28953
Deviance	-14468	-14466	-14461	-14461	-14459	-14461	-14459

[a] 1 = Necessity entrepreneurs, 0 =Opportunity entrepreneurs

[b] M0 = Null model, M1 = Model 1, M2 = Model 2, M3 = Model 3

N = 3,144 at individual–level, *n* = 26 countries; *** *p<0.001,* ** *p<0.01,* * *p<0.05,* + *p<0.1*

Table A.2 Effects on the pursuit of socio-environmental goals (additional analysis for robustness check 1)

	Controls		Individual-level predictor		Main effects		Cross-level interactions							
							PM*Motivation		SSC* Motivation		PBC* Motivation		All interactions	
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7	
	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE
Fixed effects														
Constant	32.91***	(3.35)	33.96***	(3.40)	36.78***	(3.19)	36.78***	(3.20)	36.47***	(3.19)	36.94***	(3.20)	36.60***	(3.20)
Individual-level predictor														
Entrepreneurial motivation[a]														
Independence			-0.84	(1.03)	-0.85	(1.03)	-0.80	(1.07)	-0.26	(1.09)	-0.95	(1.03)	-0.36	(1.11)
Increase-income			-3.37**	(1.11)	-3.38**	(1.11)	-3.49**	(1.12)	-3.26**	(1.11)	-3.81***	(1.14)	-3.74**	(1.14)
Individual-level controls														
Age	0.02	(0.04)	0.01	(0.04)	0.01	(0.04)	0.01	(0.04)	0.01	(0.04)	0.01	(0.04)	0.01	(0.04)
Age squared	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)
Informal investor	4.34**	(1.49)	4.59**	(1.49)	4.66**	(1.49)	4.68**	(1.49)	4.55**	(1.49)	4.72**	(1.49)	4.61**	(1.49)
Tertiary education	2.63**	(0.96)	2.90**	(0.97)	2.92**	(0.97)	2.93**	(0.97)	2.94**	(0.97)	2.91**	(0.97)	2.91**	(0.97)
Female entrepreneurs	1.95*	(0.88)	1.84*	(0.88)	1.79*	(0.88)	1.77*	(0.88)	1.81*	(0.88)	1.73*	(0.88)	1.78*	(0.88)
Country-level predictors														
Postmaterialism values (PM)					0.94*	(0.37)	1.01**	(0.38)	0.95**	(0.37)	0.94*	(0.37)	0.93*	(0.38)
Socially supportive culture (SSC)					13.84	(8.70)	13.78	(8.73)	9.04	(8.93)	14.14	(8.73)	8.67	(9.00)
Performance-based culture (PBC)					6.54	(6.74)	6.53	(6.76)	6.48	(6.73)	7.78	(6.91)	8.26	(6.94)
Country-level controls														
GDPPC	0.00	(0.00)	0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)
GDPPC squared	0.00	(0.00)	0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)
Rule of law	0.60	(1.88)	0.55	(1.89)	0.49	(1.86)	0.49	(1.87)	0.42	(1.86)	0.55	(1.86)	0.49	(1.86)
Cross-level interactions														
PM x Independence							-0.10	(0.16)					-0.02	(0.19)
PM x Increase-income							-0.18	(0.16)					0.16	(0.21)
SSC x Independence									7.64*	(3.87)			7.51+	(4.17)
SSC x Increase-income									7.13+	(3.77)			10.69*	(4.71)
PBC x Independence											0.03	(2.54)	-0.17	(2.95)
PBC x Increase-income											-5.37+	(3.14)	-7.54*	(3.54)

Variance components							
Country-level variance	115.1	116.6	79.32	79.82	79.05	79.73	79.56
Individual-level variance	567.8	566	566	565.7	565	565.3	564
% ICC	16.86	17.08	12.29	12.37	12.27	12.36	12.36
Model fit							
Degree of freedom	8	10	13	15	15	15	19
Country-level Pseudo R2 from M0[b]	-2.68	-4.01					
Individual-level Pseudo R2 from M0	0.73	1.05					
LR test (from M0)	22.36 (8)	31.65 (10)					
Prob > Chi2	0.00	0.00					
Country-level Pseudo R2 from M1 [b]		-1.30					
Individual-level Pseudo R2 from M1		0.32					
LR test (from M1)		9.29 (2)					
Prob > Chi2		0.01					
Country-level Pseudo R2 from M2 [b]			31.97				
Individual-level Pseudo R2 from M2			0.00				
LR test (from M2)			9.64 (3)				
Prob > Chi2			0.02				
Country-level Pseudo R2 from M3 [b]				-0.63	0.34	-0.52	-0.30
Individual-level Pseudo R2 from M3				0.05	0.18	0.12	0.35
LR test (from M3)				1.27 (2)	5.53 (2)	3.55 (2)	10.75 (6)
Prob > Chi2				0.53	0.06	0.17	0.10
AIC	28958	28953	28949	28952	28948	28950	28951
Deviance	-14468	-14463	-14459	-14458	-14456	-14457	-14453

[a] Entrepreneurial motivation: 1 = necessity entrepreneur (reference category which was automatically omitted in STATA), 2 = independence motivated entrepreneur, 3 = increase-income motivated entrepreneur

[b] M0 = Null model, M1 = Model 1, M2 = Model 2, M3 = Model 3

N = 3,144 at individual–level, *n* = 26 countries; *** $p<0.001$, ** $p<0.01$, * $p<0.05$, + $p<0.1$

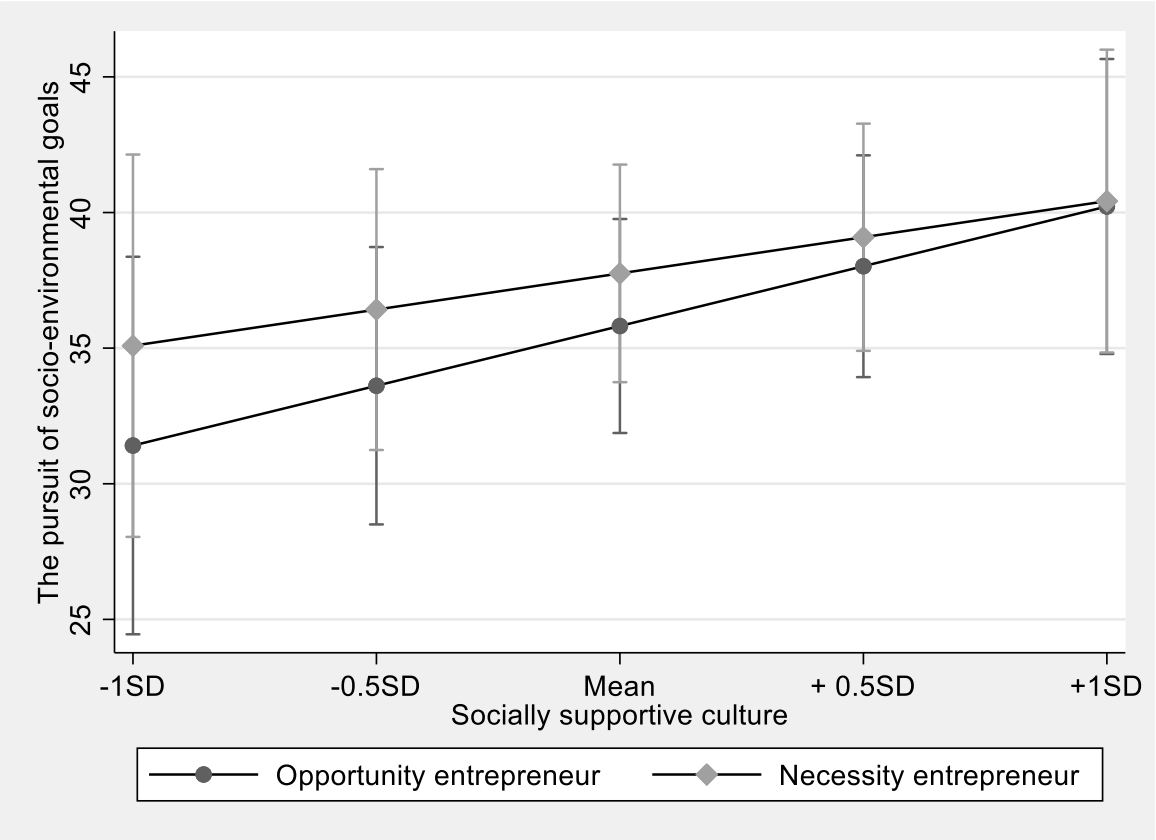


Figure A.2 Interaction effect of socially supportive culture and the entrepreneurial motivations on the pursuit of socio-environmental goal (robustness check 1)

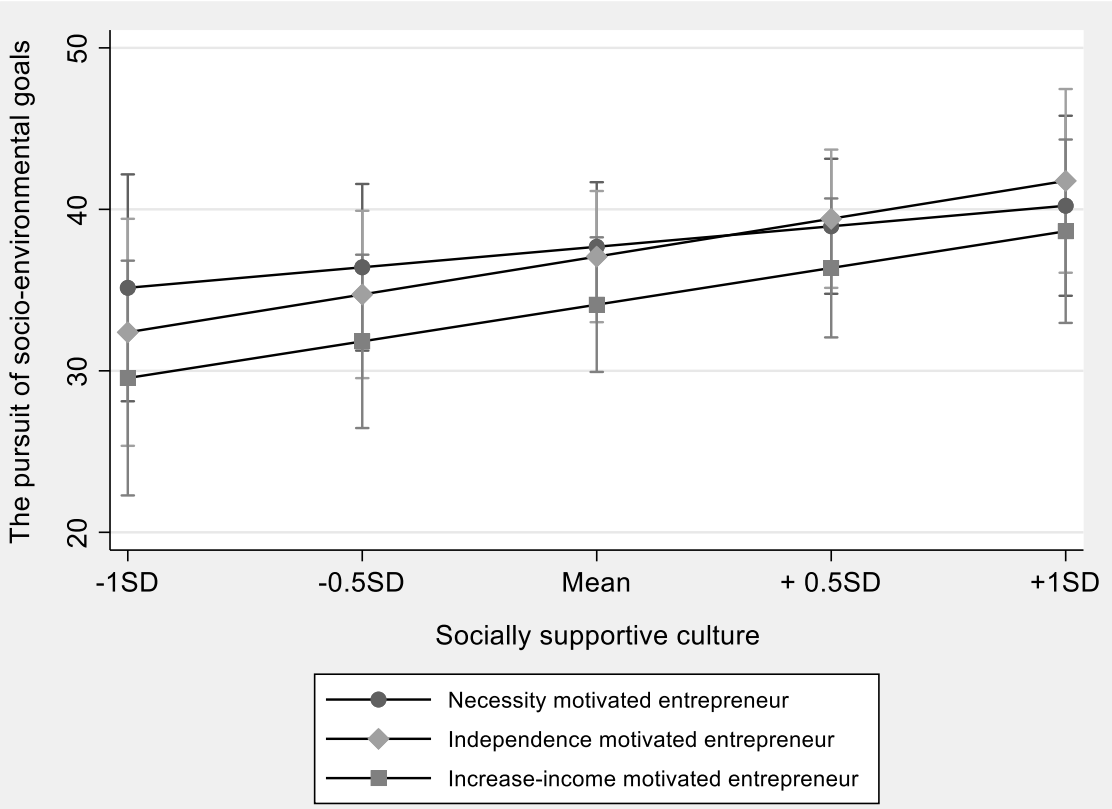


Figure A.3 Interaction effects of socially supportive culture and the entrepreneurial motivations on the pursuit of socio-environmental goals (robustness check 1)

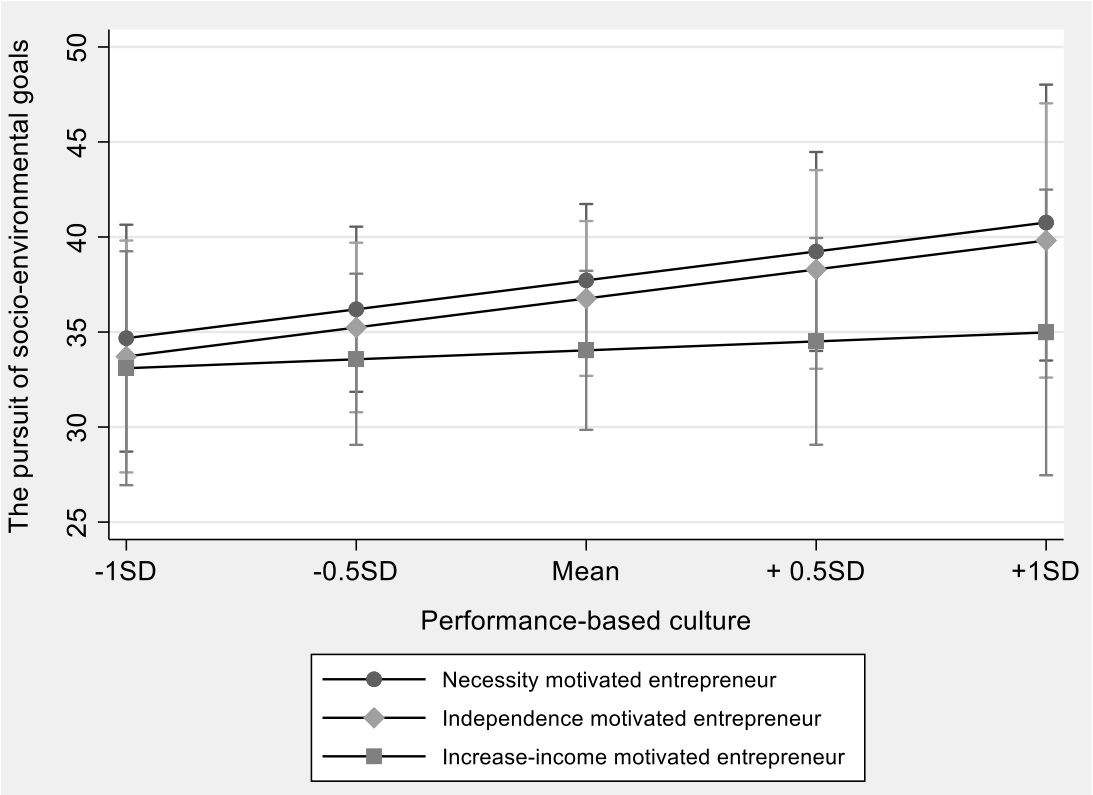


Figure A.4 Interaction effects of performance-based culture and the entrepreneurial motivations and on the pursuit of socio-environmental goals (robustness check 1)

Table A.3 Effects on the pursuit of socio-environmental goals (robustness check 2)

	Controls		Individual-level predictor		Main effects		Cross-level interactions							
							PM*NE		SSC* NE		PBC* NE		All interactions	
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7	
	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE
Fixed effects														
Constant	33.05***	(3.42)	33.26***	(3.47)	36.14***	(3.28)	36.17***	(3.29)	36.14***	(3.28)	36.46***	(3.28)	36.46***	(3.29)
Individual-level predictor														
Necessity entrepreneurs (NE)[a]			0.35	(1.04)	0.37	(1.04)	0.40	(1.04)	0.36	(1.04)	0.75	(1.06)	0.75	(1.07)
Individual-level controls														
Age	-0.02	(0.04)	-0.02	(0.04)	-0.01	(0.04)	-0.01	(0.04)	-0.01	(0.04)	-0.02	(0.04)	-0.02	(0.04)
Age squared	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)
Informal investor	3.93*	(1.62)	3.96*	(1.62)	4.02*	(1.62)	4.04*	(1.62)	4.02*	(1.62)	4.02*	(1.62)	4.02*	(1.62)
Tertiary education	2.82**	(1.06)	2.85**	(1.07)	2.90**	(1.07)	2.91**	(1.07)	2.90**	(1.07)	2.88**	(1.07)	2.88**	(1.07)
Female entrepreneurs	1.78+	(0.96)	1.77+	(0.96)	1.71+	(0.96)	1.72+	(0.96)	1.72+	(0.97)	1.74+	(0.96)	1.75+	(0.96)
Country-level predictors														
Postmaterialism values (PM)					0.96*	(0.38)	1.01**	(0.39)	0.96*	(0.38)	0.96*	(0.38)	0.97*	(0.39)
Socially supportive culture (SSC)					13.05	(8.90)	13.02	(8.91)	12.99	(9.32)	13.38	(8.89)	13.23	(9.42)
Performance-based culture (PBC)					6.75	(6.88)	6.77	(6.89)	6.75	(6.88)	10.02	(7.17)	9.98	(7.21)
Country-level controls														
GDPPC	0.00	(0.00)	0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)
GDPPC squared	0.00	(0.00)	0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)
Rule of law	0.62	(1.91)	0.63	(1.91)	0.47	(1.89)	0.45	(1.90)	0.47	(1.89)	0.48	(1.89)	0.48	(1.89)
Cross-level interactions														
PM x NE							0.09	(0.15)					0.01	(0.19)
SSC x NE									-0.08	(3.66)			-0.19	(4.24)
PBC x NE											4.65	(2.93)	4.58	(3.14)
Variance components														
Country-level variance	116.8		117.1		81.14		81.38		81.14		80.85		80.87	
Individual-level variance	574.7		574.6		574.5		574.4		574.5		574		574	

% ICC	16.89	16.93	12.38	12.41	12.38	12.35	12.35
Model fit							
Degree of freedom	8	9	12	13	13	13	15
Country-level Pseudo R2 from M0[b]	-3.45	-3.72					
Individual-level Pseudo R2 from M0	0.67	0.69					
LR test (from M0)	17.38 (8)	17.50 (9)					
Prob > Chi2	0.03	0.04					
Country-level Pseudo R2 from M1 [b]		-0.26					
Individual-level Pseudo R2 from M1		0.02					
LR test (from M1)		0.12 (1)					
Prob > Chi2		0.13					
Country-level Pseudo R2 from M2 [b]			30.71				
Individual-level Pseudo R2 from M2			0.02				
LR test (from M2)			9.33 (3)				
Prob > Chi2			0.03				
Country-level Pseudo R2 from M3 [b]				-0.30	0.00	0.36	0.33
Individual-level Pseudo R2 from M3				0.02	0.00	0.09	0.09
LR test (from M3)				0.33 (1)	0.00 (1)	2.52 (1)	2.54 (3)
Prob > Chi2				0.57	0.98	0.11	0.47
AIC	24719	24720	24717	24719	24719	24717	24721
Deviance	-12348	-12348	-12344	-12343	-12344	-12342	-12342

[a] 1 = Necessity entrepreneurs, 0 = Opportunity entrepreneurs

[b] M0 = Null model, M1 = Model 1, M2 = Model 2, M3 = Model 3

N = 2,679 at individual–level, *n* = 26 countries; *** *p<0.001,* ** *p<0.01,* * *p<0.05,* + *p<0.1*

Appendix B – Chapter 3

Table B.1 Effects on the engagement of entrepreneurs in innovative activities (robustness check)

	Null model				Level 1 controls				Level 2 controls				Main models			
	Model 1				Model 2				Model 3				Model 4			
	Model 1.1		Model 1.2		Model 2.1		Model 2.2		Model 3.1		Model 3.2		Model 4.1		Model 4.2	
	Product		Process		Product		Process		Product		Process		Product		Process	
Fixed effects																
Constant	0.28***	(0.04)	0.09***	(0.01)	0.23***	(0.03)	0.07***	(0.01)	0.22***	(0.03)	0.06***	(0.01)	0.22***	(0.03)	0.06***	(0.01)
Individual-level predictors																
Social goals	2.14+	(0.83)	2.01	(0.93)	1.93+	(0.73)	1.99+	(0.82)	1.92+	(0.72)	1.98+	(0.82)	1.92+	(0.72)	1.97	(0.81)
Environmental goals	1.78+	(0.59)	0.50	(0.37)	1.80*	(0.52)	0.50	(0.36)	1.80*	(0.52)	0.45	(0.35)	1.80*	(0.52)	0.46	(0.35)
Individual-level controls																
Age					1.00	(0.00)	0.99*	(0.01)	1.00	(0.00)	0.98*	(0.01)	1.00	(0.00)	0.98*	(0.01)
Age squared					1.00	(0.00)	1.00	(0.00)	1.00	(0.00)	1.00	(0.00)	1.00	(0.00)	1.00	(0.00)
Informal investor in last 3 years					1.24	(0.19)	1.28	(0.27)	1.24	(0.19)	1.27	(0.27)	1.26	(0.19)	1.28	(0.27)
Tertiary education					1.36**	(0.14)	1.08	(0.16)	1.36**	(0.14)	1.11	(0.16)	1.37**	(0.14)	1.12	(0.16)
Female entrepreneur					1.16	(0.11)	1.12	(0.15)	1.16	(0.11)	1.12	(0.15)	1.15	(0.11)	1.12	(0.15)
Established business					2.63*	(1.05)	3.97**	(1.89)	2.63*	(1.05)	3.91**	(1.86)	2.67*	(1.06)	3.97**	(1.89)
Entrepreneurial team size (log)					1.32***	(0.11)	0.95	(0.13)	1.32***	(0.11)	0.95	(0.13)	1.31**	(0.11)	0.96	(0.13)
Country-level predictors																
Government activism (GA)													1.00	(0.01)	1.02	(0.01)
Postmaterialism values (PM)													1.05*	(0.02)	1.00	(0.03)
Socially supportive culture (SSC)													2.38*	(1.04)	1.58	(0.97)

Country-level controls																
Rule of law									1.08	(0.12)	1.05	(0.13)	1.14	(0.12)	1.05	(0.15)
GDPPC									1.00	(0.00)	1.00*	(0.00)	1.00	(0.00)	1.00*	(0.00)
Random effects																
Country-level variance	0.29	(0.11)	0.47	(0.21)	0.29	(0.12)	0.53	(0.23)	0.27	(0.11)	0.33	(0.16)	0.17	(0.08)	0.30	(0.15)
ICC	0.08	(0.03)	0.13	(0.05)	0.08	(0.03)	0.14	(0.05)	0.08	(0.03)	0.09	(0.04)	0.05	(0.02)	0.08	(0.04)
Model fit																
Degrees of freedom (df)	2		2		2		2		9		9		11		11	
LR test (from Model without random slopes)	4.75 (2)		17.80 (1)													
Prob > Chi2	0.09		0.00													
Pseudo R2 from Model 1					0.00		-0.12		0.07		0.29					
LR test (from Model 1)					33.45 (6)		17.14 (6)		34.53 (8)		23.60 (8)					
Prob > Chi2					0.00		0.01		0.00		0.00					
Pseudo R2 from Model 2									6.90		37.74					
LR test (from Model 2)									1.08 (2)		6.45 (2)					
Prob > Chi2									0.58		0.04					
Pseudo R2 from Model 3													0.37		0.09	
LR test (from Model 3)													7.49 (3)		1.91 (3)	
Prob > Chi2													0.06		0.59	
AIC	2943		1783		2921		1778		2924		1776		2923		1780	
Deviance	-1465		-885.7		-1449		-877.1		-1448		-873.9		-1444		-872.9	

Table B.1 *continued*

	Cross-level interactions													
	Model 5				Model 6				Model 7				Model 8			
	Model 5.1		Model 5.2		Model 6.1		Model 6.2		Model 7.1		Model 7.2		Model 8.1		Model 8.2	
	Product		Process		Product		Process		Product		Process		Product		Process	
Fixed effects																
Constant	0.22***	(0.03)	0.06***	(0.01)	0.22***	(0.03)	0.06***	(0.01)	0.22***	(0.03)	0.06***	(0.01)	0.22***	(0.03)	0.06***	(0.01)
Individual-level predictors																
Social goals	1.69	(0.58)	1.90	(0.91)	1.39	(0.51)	1.94	(0.90)	1.52	(0.55)	1.77	(0.77)	1.26	(0.46)	1.69	(0.74)
Environmental goals	1.92*	(0.56)	0.47	(0.36)	2.20*	(0.69)	0.46	(0.36)	2.07*	(0.63)	0.49	(0.38)	2.42**	(0.79)	0.47	(0.36)
Individual-level controls																
Age	1.00	(0.00)	0.98*	(0.01)	1.00	(0.00)	0.98*	(0.01)	1.00	(0.00)	0.98*	(0.01)	1.00	(0.00)	0.98*	(0.01)
Age squared	1.00	(0.00)	1.00	(0.00)	1.00	(0.00)	1.00	(0.00)	1.00	(0.00)	1.00	(0.00)	1.00	(0.00)	1.00	(0.00)
Informal investor in last 3 years	1.27	(0.19)	1.28	(0.27)	1.27	(0.19)	1.27	(0.27)	1.25	(0.19)	1.27	(0.27)	1.26	(0.19)	1.26	(0.26)
Tertiary education	1.36**	(0.14)	1.12	(0.16)	1.36**	(0.14)	1.12	(0.16)	1.37**	(0.14)	1.11	(0.16)	1.35**	(0.14)	1.12	(0.16)
Female entrepreneur	1.14	(0.11)	1.13	(0.15)	1.15	(0.11)	1.13	(0.15)	1.15	(0.11)	1.12	(0.15)	1.14	(0.11)	1.13	(0.15)
Established business	2.67*	(1.07)	3.95**	(1.89)	2.63*	(1.05)	3.99**	(1.90)	2.71*	(1.08)	4.01**	(1.91)	2.69*	(1.08)	4.06**	(1.94)
Entrepreneurial team size (log)	1.31***	(0.11)	0.96	(0.13)	1.32***	(0.11)	0.96	(0.13)	1.31**	(0.11)	0.96	(0.13)	1.32***	(0.11)	0.96	(0.13)
Country-level predictors																
Government activism (GA)	1.00	(0.01)	1.02	(0.01)	1.00	(0.01)	1.02	(0.01)	1.00	(0.01)	1.02	(0.01)	1.00	(0.01)	1.02	(0.01)
Postmaterialism values (PM)	1.05*	(0.02)	1.00	(0.03)	1.04*	(0.02)	1.00	(0.03)	1.05*	(0.02)	1.00	(0.03)	1.05*	(0.02)	1.00	(0.03)
Socially supportive culture (SSC)	2.39*	(1.03)	1.55	(0.95)	2.40*	(1.04)	1.58	(0.97)	2.46*	(1.06)	1.62	(0.99)	2.45*	(1.05)	1.59	(0.99)

Country-level controls																
Rule of law	1.15	(0.12)	1.05	(0.15)	1.15	(0.12)	1.04	(0.15)	1.15	(0.12)	1.05	(0.15)	1.16	(0.12)	1.04	(0.15)
GDPPC	1.00	(0.00)	1.00*	(0.00)	1.00	(0.00)	1.00*	(0.00)	1.00	(0.00)	1.00*	(0.00)	1.00	(0.00)	1.00*	(0.00)
Cross-level interactions																
GA*Social goals	1.07**	(0.02)	0.99	(0.04)									1.05+	(0.03)	0.99	(0.04)
GA*Environmental goals	0.97	(0.02)	0.99	(0.05)									0.99	(0.02)	0.97	(0.06)
PM*Social goals					1.15*	(0.06)	0.95	(0.08)					1.07	(0.06)	0.93	(0.08)
PM*Environmental goals					0.93	(0.04)	1.04	(0.12)					0.95	(0.05)	1.08	(0.15)
SSC*Social goals									0.04**	(0.05)	0.31	(0.44)	0.12+	(0.15)	0.12	(0.20)
SSC*Environmental goals									5.03	(5.36)	1.64	(4.40)	3.93	(4.37)	1.81	(5.36)
Random effects																
Country-level variance	0.16	(0.08)	0.31	(0.16)	0.17	(0.08)	0.30	(0.15)	0.16	(0.08)	0.30	(0.15)	0.16	(0.08)	0.31	(0.16)
ICC	0.05	(0.02)	0.08	(0.04)	0.05	(0.02)	0.08	(0.04)	0.05	(0.02)	0.08	(0.04)	0.05	(0.02)	0.09	(0.04)
Model fit																
Degrees of freedom (df)	16		16		16		16		16		16		20		20	
Pseudo R2 from Model 4	0.06		-0.03		0.00		0.00		0.06		0.00		0.06		-0.03	
LR test (from Model 4)	8.19 (2)		0.34 (3)		6.11 (2)		0.50 (3)		6.48 (2)		0.69 (2)		13.64 (6)		2.48 (6)	
Prob > Chi2	0.02		0.95		0.05		0.92		0.04		0.71		0.04		0.87	
AIC	2919		1786		2921		1785		2920		1783		2921		1789	
Deviance	-1440		-872.8		-1441		-872.7		-1441		-872.6		-1438		-871.7	

Standard errors in parentheses; *** p<0.001, ** p<0.01, * p<0.05, + p<0.10 (two-tailed) N = 2,855 observations, n = 26 countries
Estimates in Models 1 - 8 report odds ratio (OR). OR>1 represents a positive relationship whereas OR<1 represents a negative relationship.
Note: the first level variances are fixed at $\pi^2/3$ in the multilevel logistic models.

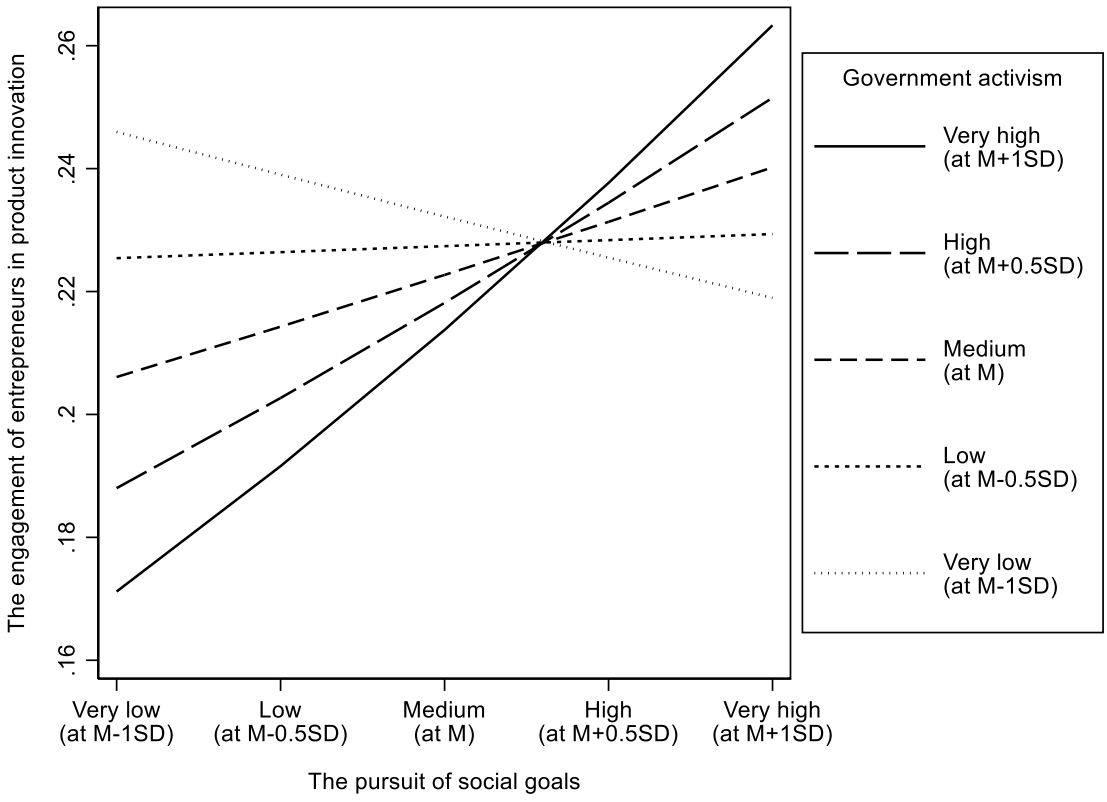


Figure B.1 Interaction effect of the pursuit of social goals and government activism on the engagement of entrepreneurs in product innovation (robustness check)

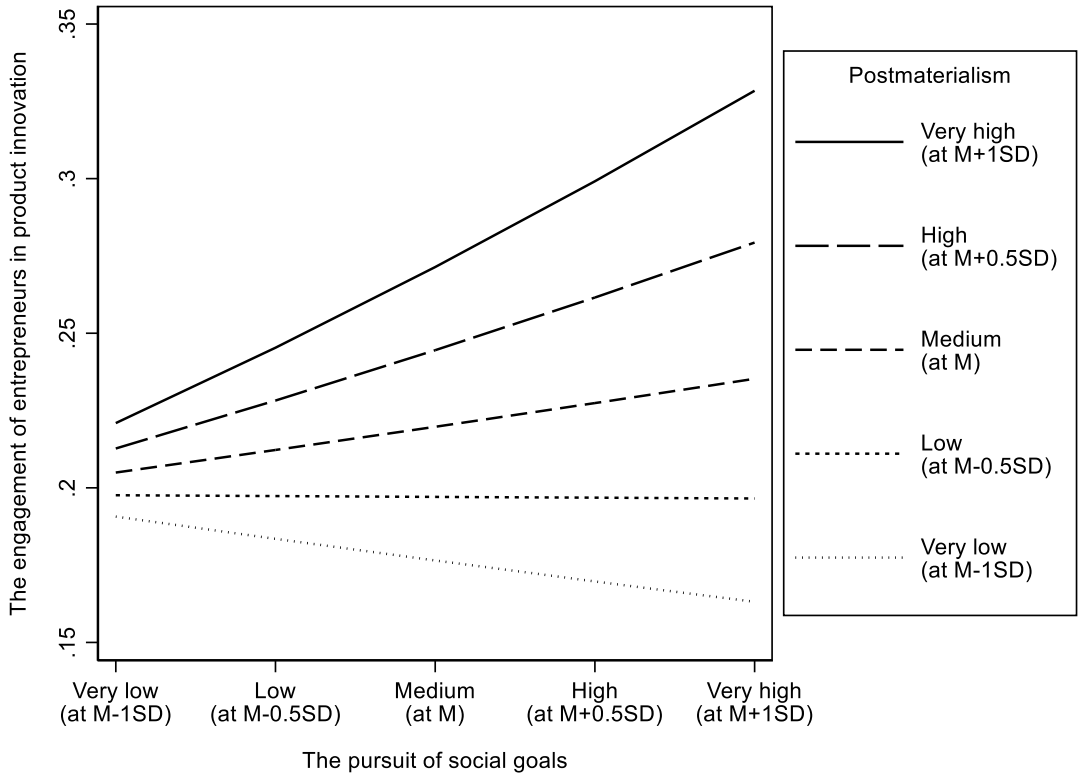


Figure B.2 Interaction effect of the pursuit of social goals and postmaterialism cultural values on the engagement of entrepreneurs in product innovation (robustness check)

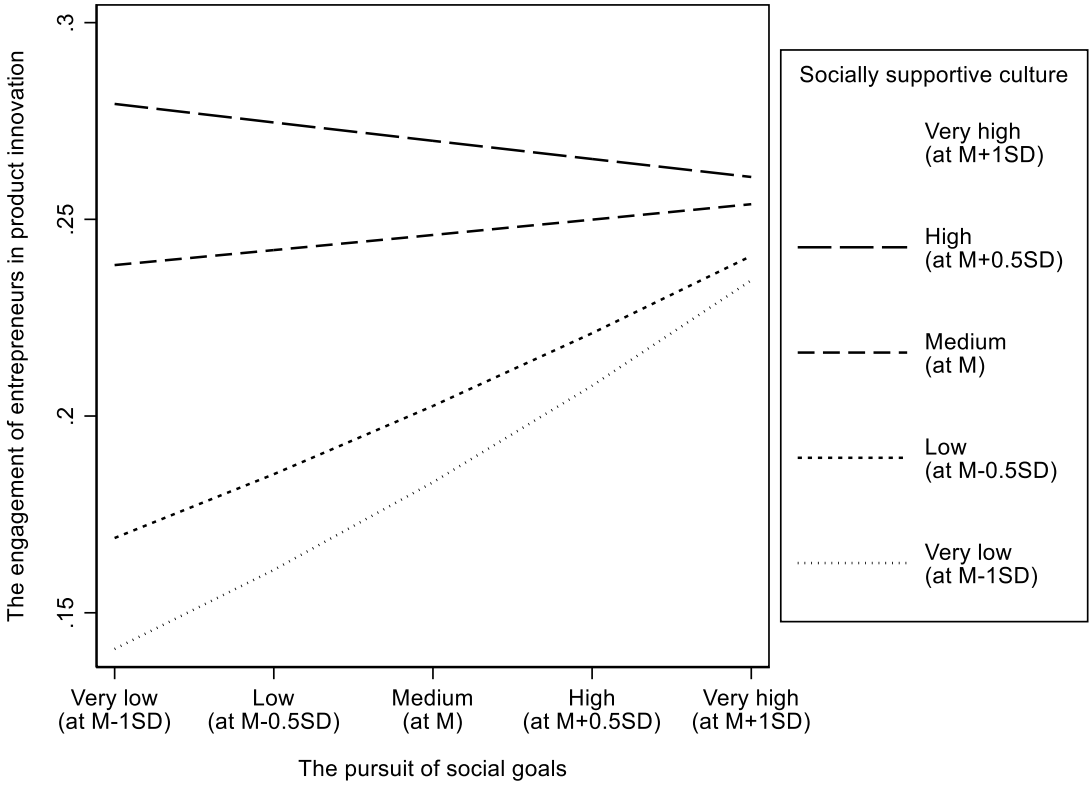


Figure B.3 Interaction effect of the pursuit of social goals and socially supportive culture on the engagement of entrepreneurs in product innovation (robustness check)