# Which Entrepreneurial Type is more Innovative?

A Comparison between Social Entrepreneurship and Conventional Entrepreneurship

Name: Arnelys Martus

University: Erasmus University Rotterdam

Faculty: Erasmus School of Economics

Student Number: 352282

Supervisor: B. Hoogendoorn

Co-reader: P. Van der Zwan

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ERASMUS UNIVERSITEIT ROTTERDAM

**Abstract**

Attention to social entrepreneurship has increased over the years. Although previous research on this topic has been case-based or conceptualized, it has been suggested that social and conventional entrepreneurs differ with regards to innovation. This study aims to improve the understanding of this relationship by empirically testing it. The definitions of social entrepreneurship in the literature are broad, but this study only takes into account two definitions of social entrepreneurship, namely (1) the double bottom line definition, that both social and economic return are important; and (2) that the primary goal of social entrepreneurs is to create social value. Using quantitative research it is analysed if social entrepreneurs are different from conventional entrepreneurs with regards to innovativeness. The main findings are that social entrepreneurs are more innovative than conventional entrepreneurs. This reinforces findings of previous literature on social entrepreneurship. Despite the fact that social entrepreneurs are found to be more innovative than conventional entrepreneurs, the explorative analysis shows that this is not always the case. Social entrepreneurs living in different level of economic development relate differently to innovation. In factor-driven economies there is no significant difference between social and conventional entrepreneurs. In efficiency-driven economies, social entrepreneurs are more innovative than conventional entrepreneurs. In innovation-driven economies, social entrepreneur are less innovative than conventional entrepreneurs. Furthermore, it is found that social entrepreneurs in factor-driven and efficiency-driven economies show no significant difference in the likelihood of being innovative, while social entrepreneurs in innovation-driven are less likely to be innovative compared to social entrepreneurs in factor-driven economies. The study also analysed two factors; fear of failure and opportunity recognition. These may be of influence on the relationship between social entrepreneurship and innovation. The conclusion is that both the fear of failure and opportunity recognition of entrepreneurs does not have an effect on this relationship. Further research should be done on other factors that may explain this relationship. The research has implications for corporate leaders and policy makers in that it clarifies the relationship between social entrepreneurship and innovation. Policies should stimulate social entrepreneurship more since they are more innovative than conventional entrepreneurs and thus this will lead to economic growth. Aside from the innovation aspect, due to the goals of social entrepreneurs, there is also a contribution to the environment and sustainable development.

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# Chapter 1 Introduction

There is a growing recognition that transformation is needed to reduce the destructive, social and environmental impact that is created by the current unsustainable business activities (Hall, Daneke, & Lenox, 2010). Due to changes in the atmosphere, increase in inequality and poverty it can be observed that public attention has increased to the environmental and social challenges in this world (Wüstenhagen et al., 2008). Furthermore, the need for action has been expressed by corporate leaders and policy makers. As a results, an increase can be observed in the discussion about social entrepreneurship. Previous literature suggests that firms contribute the most to sustainable development of an economy and society if their core business include solutions to environmental and social problems (Schaltegger & Wagner, 2011).

Entrepreneurship plays a major role in seeking opportunities to create sustainable solutions (Hall, Daneke, & Lenox, 2010). Only recently the interest of researchers have been attracted to entrepreneurship as a process to foster social progress (Alvord, Brown, & Letts, 2004; Thompson, 2002; Dees & Elias, 1998). In the literature there is often a reference made to the role that entrepreneurs play in stimulating innovation (Schumpeter, 1965). Effective and sustainable solutions require many of the ingredients that are associated with successful business innovation (Alvord, Brown, & Letts, 2004). Schumpeter (1965) claims that there is a strong link between innovation and entrepreneurial activity and characterizes entrepreneurs as innovators. The focus on entrepreneurs is justified given that it has been consistently shown that entrepreneurs are the main driver of innovation (Marcati, Guido, & Peluso, 2008). Kuratko (2007) describes entrepreneurs as the catalyst of change in the business world. Furthermore, it has been argued that innovative entrepreneurs are of particular importance for competitiveness, economic growth and job creation (Carree et al., 2007).

Recently, different types of entrepreneurs have been identified, each of them with its own goals and challenges. Social entrepreneurs are individuals who add value to existing services and take risks on behalf of people they serve by ensuring both social and financial returns on their investments (Brinckerhoff, 2000). Conventional entrepreneurs, on other hand, are focused primarily on financial returns. The underlying drive for social entrepreneurship is the creation of social value rather than personal wealth (Perrini, Vurro, & Costanzo, 2010; Austin, Stevenson, & Wei-Skillem, 2006). The activity of such social creation is characterized by innovation or creation of something new rather than the replication of existing enterprises or activities (Noruzi, Westover, & Rahimi, 2010). Therefore, it is argued that sustainable development can better be achieved by social entrepreneurs than conventional entrepreneurs.

To analyse this we will research the likelihood of innovativeness of the two entrepreneurial types. Thus, the research question is:

**What is the effect of being a social entrepreneur on the probability of being innovative?**

The aim of this research is to examine how social entrepreneurship relates to innovation compared to conventional entrepreneurship. The interest in social entrepreneurship and innovation has increased over the past few years. The reason for this is the prolonged recession and pressure on the public expenditures (Phillips et al., 2014). This has resulted in a smaller public sector and the desire for more activities, previously supported by the state, to be supported through social entrepreneurship.

As Mair and Noboa (2003), we expect there to be differences between conventional entrepreneurs and social entrepreneurs. In the case of conventional entrepreneurship, the value of an opportunity is the economic gain for the entrepreneur that results from innovative use of resources (Eckhardt & Shane, 2003). Whilst for the social entrepreneur, the value of the opportunity also includes social benefits for others, such as higher level of ecological awareness or education. Thus, a social entrepreneur does not create value for (solely) him or herself, but for a social group. These authors have found evidence that the innovation capabilities of social entrepreneurs are enhanced. A reason could be that they are more able to develop their personal mastery through networking (Nga & Shamuganathan, 2010). Therefore, they are more able to tap into underdeveloped and unchartered markets (Hart & Christensen, 1992; Prahalad, 2006). Another reason could be that the entrepreneurial attitude of social entrepreneurs lead to more innovations, due to the high level of risk that social entrepreneurs are willing to bear (Brooks, 2009) or the extent to which social entrepreneurs recognize opportunities (Austin, Stevenson, & Wei-Skillem, 2006).

In this study, the relationship between innovation and social entrepreneurship is analysed using the Global Entrepreneurship Monitor (GEM) data of 2009. Most definitions of social entrepreneurship emphasize the innovative character of the social entrepreneurial activities (Alvord, Brown, & Letts, 2004). Although, a lot of authors argue that there are some differences between social entrepreneurs, innovation level and the nature of their innovation. They argue that social entrepreneurs have higher degree of innovativeness (Austin, Stevenson, & Wei-Skillem, 2006; Dorado, 2006; Nga & Shamuganathan, 2010). By this means, we set out to research how social entrepreneurship relates to innovation. Furthermore, social entrepreneurs have been often thought to possess distinct personal characteristics which define their actions (Nga & Shamuganathan, 2010). Therefore, there are analyses on different factors that may affect the relationship between innovation and social entrepreneurship. These factors are risk tolerance and opportunity recognition.

Which entrepreneurial type is more innovative?

The academic contribution of the research is as follows. The existing literature on this topic is mostly conceptualized and case-based. The study contributes to the literature on social entrepreneurs by empirically testing the performance of social entrepreneurs compared to conventional entrepreneurs. Hereby, testing the assumptions that are made from the existing literature. As Tapsell and Woods (2010) mention, research on social and conventional entrepreneurship may enrich and inform our discussions within the traditional discipline of entrepreneurship (Steyaert & Hjorth, 2008). In addition, the ability of social entrepreneurs to achieve social transformation is analyzed. This research is crucial to understand and recognize the role social entrepreneurs play in the societal transformation.

The social contribution is expressed by the following. It is relevant to develop an understanding of the relationship between innovation and social entrepreneurship, since this will lead to better policies and government support. Global policy makers as well as corporate leaders are expressing the need for a reduction of the destructive social and environmental impact. The subject of innovation is relevant for the society due to the fact that innovation is essential for the creation of economic growth, hence it should be encouraged in the society (Sundbo, 1998). There are reasons to believe that social entrepreneurs are the most innovative entrepreneurs. Therefore, there are also a growing international interest in the role that social entrepreneurs have in meeting global challenges of today (Phillips et al., 2014). Moreover, social entrepreneurs have been argued to serve as catalysts for engaging larger firms (Dees, 2008). This is done by finding those opportunities that larger firms will not notice and demonstrating the profitability of this product or service. Thus, this study on social entrepreneurship may also have implication for larger firms.

The results show that there is a positive relationship between social entrepreneurship and innovation. It can be concluded that social entrepreneurs indeed have a higher probability of being innovative than conventional entrepreneurs. These findings confirm the assumptions of existing literature and contribute empirically to the discussion on social and conventional entrepreneurship. Although, it could not be concluded that the perceived ability to recognize opportunity or fear of failure of social entrepreneurs have any influence on the likelihood of being innovative. This leaves room for further research on what does make social entrepreneurs more innovative than conventional entrepreneurs.

The remainder of this study is structured as follows. Chapter 2 presents a review of the existing literature. The definition of the entrepreneurial types is given and hypotheses are constructed. Chapter 3 presents the data and methodology. The sample and the variables used in this research are explained. Moreover, the method and empirical strategy is presented. Chapter 4 presents the results of the logistic regressions. Lastly, Chapter 5 presents the discussion and conclusion.

# Chapter 2 Literature Review

*In this chapter, a description of the entrepreneurial types are given, existing literature is reviewed and subsequently hypotheses are formulated.*

## 2.1 Entrepreneurial Types

As Baumol (1968) mentions, entrepreneurship is a vital component in the process of economic growth. In this section, two entrepreneurial types are presented; conventional entrepreneurship and social entrepreneurship. There are more types of entrepreneurship, for example; environmental, sustainable, ethnic and institutional entrepreneurship. We will focus on social entrepreneurship and conventional entrepreneurship, because these concepts are more commonly defined in literature.

### 2.1.1 Conventional Entrepreneurship

There are a lot of definitions in existing literature. Richard Cantillon was the first to recognize the crucial role of entrepreneurs (Hébert & Link, 1989). He defines entrepreneurs as 'undertakers engaged in the market exchange at their own risk for the purpose of making a profit' (Cantillon, 1931).

Others define these individuals as entrepreneurs who seek and exploit business opportunities (Kirzner, 1973; Shane & Venkataraman, 2000), grow through creative destruction (Schumpeter, 1934) and strive for maximum profit, while taking into account risk (Knight, 1921).

According to Sternberg and Wennekers (2005), there are two notions to the concept of entrepreneurship; a behavioural and an occupational. Behavioural in the sense of entrepreneurs seizing an economic opportunity; and occupational which is that of an individual that owns and manages a business on their own account and risk (Sternberg & Wennekers, 2005).

In this study individuals who primarily pursue economic goals are regarded as conventional entrepreneurs, in other words wealth-maximizing entrepreneurs. These are, as suggested by Baumol (1990), individuals who made the choice to be an entrepreneur to maximize their utility (from wealth, power and prestige). Furthermore, they are ultimately measured by their financial results (Boschee & McClurg, 2003).

### 2.1.2 Social Entrepreneurship

Social entrepreneurship has a broad definition in the existing literature, this require us to specify how we define social entrepreneurship. At the individual level, social entrepreneurship is defined as individuals who drive social change by using their entrepreneurial spirit (Hockerts, 2006). Ventures that are bridging profit and service goals in new and creative ways are growing (Eakin, 2003). They are called social enterprises, social ventures or double-bottom line organizations (Zahra et al., 2009). What

is appealing about these ventures are their hybrid nature, these organisations are bridging service and profit goals. Examples are; the for-profit organisation that do good while doing well financially; or the non-profit organisations that self-finance their do-good operations. Although this seem like a new phenomenon it is not, hospitals and educational institutions have been doing this for years. What is new is that these ventures are spreading into non-traditional areas, such as the financial intermediation (e.g. Grameen Bank) and retailing (e.g. Ben & Jerry).

In this study there are two definitions taken into account. First definition is that social entrepreneurs have as primary goal to create social value and solve societal problems (Schaltegger & Wagner, 2011). Second definition is that social entrepreneurs often pursue both financial and social returns. This double bottom line definition is reinforced by other authors, here is an overview of authors that place both social and economic dimensions on an equal footing (Table 1).

*Table 1: Definitions of Social Entrepreneurship*

| Source | Definitions |
|---|---|
| Desa and Kotha (2006) | Social venture is a balance between for-profit business and non-profit organisation. |
| Fuqua school (2005) | The art of simultaneously pursuing both a financial and social return on investment (the 'double' bottom line) |
| MacMillan (2005) | Process whereby the creation of new business enterprise leads to social wealth enhancement so that both society and the entrepreneurs benefit. |
| Dorado (2006) | The essence of social entrepreneurs is their mixing of profit and social goals, thus they blend business and social principles in new and creative ways |
| Mair and Marti (2006) | Social entrepreneurship ventures emphasize on social value and simultaneously see economic value creation as a necessary condition to ensure financial viability. |
| Seelos and Mair (2005) | Social entrepreneurship is a structure that allows individuals to strike their own balance between the desire to make a social contribution and the personal need to capture an economic return from the activity. |
| Emerson and Twersky (1996) | Social entrepreneurship is a combination of commercial enterprises with social impacts. |

From the definitions presented in Table 1, it is logical to conclude that organizations pursuing profits as their sole objective often fall outside the scope of social entrepreneurship (Zahra et al., 2009). Similarly, for-profit firms that are engaged in philanthropic or social responsible activities will generally lie outside the boundaries of social entrepreneurship. Along with, not-for-profit organisations, social

service organizations or non-governmental organisations that are ignoring the economic implication of their operations (Zahra et al., 2009). Furthermore, they argue that any definition of social entrepreneurship should reflect both social and economic considerations.

An example of a successful case of social entrepreneurship is the Grameen bank in Bangladesh, founded in 1976 by Professor Muhammad Yunus. By means of bringing financial support to the poor, it helps women in particularly to establish profitable businesses that contributes to fighting poverty (Yunus, 1999). Another example is Ben & Jerry, the mission statement displayed on the company's website blends a firm commitment to profitability with an equally strong social and environmental sense (Ben & Jerry's Homemade Holdings Inc., 2005).

### 2.1.3 Conventional versus Social Entrepreneurship

Several studies show that there is a distinction between the two types of entrepreneur. The first and most obvious distinction is the social aspect. Seelos and Mair (2005) argue that the greatest distinction between both entrepreneurial types is the social mission of social entrepreneurs. Boschee and McClurg (2003) argue that social entrepreneurs are different from traditional entrepreneurs; firstly, because their earned income strategy is directly tied to their mission, and secondly, because they are driven by a double bottom line.

Following this line of reasoning, social entrepreneurs are also found to have different motivations and goals when starting a business (Roberts & Woods, 2005; Shaw & Carter, 2007; Seelos & Mair, 2005). Social entrepreneurs are concerned with helping others rather than focussed on earning more money (Roberts & Woods, 2005). Moreover, their driving factor is more towards delivering social justice than being commercially successful. Contrary to conventional entrepreneur who are found to be more motivated by autonomy and achievements, social entrepreneurs are found to be more motivated by achieving social aims (Shaw & Carter, 2007). Furthermore, Roberts and Woods (2005) mention some characteristics of social entrepreneur; they are passionate and have the conviction that what they are doing is important and consequently the ability to go beyond rational and logic to stick to their dream, if necessary against all evidence.

Another distinctive factor is the importance of priorities in separating social from conventional entrepreneur (Seelos & Mair, 2005). It was noted that social entrepreneurs place different level of importance to different goals. The primary goal of a social entrepreneur is to create social value, while adding economic value is rated as less important and is seen as a by-product that allows the organization to achieve sustainability and self-sufficiency (Seelos & Mair, 2005). This is opposite for conventional entrepreneurs who see the creation of social wealth as a by-product of economic value created by the entrepreneur (Venkataraman, 1997). This is reinforced by other literature as well(e.g.

Bacq, Hartog & Hoogendoorn, 2014; Mair & Marti, 2006; Roberts & Woods, 2005; Leadbeater, 1997). Leadbeater (1997) argues that organisation that are social do not pursue profit as their main objective. Bacq, Hartog and Hoogendoorn (2014) describe social entrepreneurs as individuals who are more concerned with reaching social and environmental goals instead of economic goals. Moreover, Mair and Marti (2006) suggest that the main difference between social and conventional entrepreneur is the prioritization of creating social wealth above economic value creation.

An additional distinctive feature of social entrepreneurs is that they have limited potential to capture the value created (Mair & Marti, 2006). Roberts and Woods (2005) find that social entrepreneurs are found to be different in assessing what they value as important, while also being less capable of capturing created surplus. This is because their customers are most of the time unable to pay for the products or services provided (Seelos & Mair, 2005).

## 2.2 Innovation and Social Entrepreneurship

In this section, the relationship between innovation and social entrepreneurship will be analysed. Although most previous definitions of entrepreneurship include innovation (Drucker, 1985), there are quite some differences between the innovation level of entrepreneurs. Several forms of innovation and their relatedness to social entrepreneurship are reviewed. Firstly, the definition of innovation is given and later the existing literature on innovation and social entrepreneurship is reviewed.

### 2.2.1 Concept of Innovation

Innovation plays an important role for national and international economic policy and is a major part of strategies for sustainable development (Rennings, 2000). Innovation is an outcome that manifests itself in new products, product features and production methods (Phills, Deiglmeier, & Miller, 2008). It has commonly been assumed that innovation is the main driver of economic growth (Bos-Brouwers, 2010). Practitioners have interest in innovation because this strengthens the competitiveness for countries as well as for the individuals' venture (Porter, 1985). Additionally, policymakers and funders are interested in innovation, since they need to know the best way to support innovation.

Innovation is a subjective concept, thus it depends on the individuals perspective whether some activity qualifies as innovative or not (Koellinger, 2008). There are two criteria to be considered an innovation (Phills, Deiglmeier, & Miller, 2008). The first is novelty, it does not have to be original, but they must be new to the user, context or application. The second criterion is improvement, the product or process must be more effective or efficient than previous alternatives. Furthermore, it can be noted that innovation involves uncertainty and risk (Knight, 1921). The innovator has to have courage to step into unknown territory (Koellinger, 2008).

The benefits of innovation are the following. Innovation contributes to profitability and long-term continuity of the firm. Furthermore, it leads to quality improvement; more variation and diversification in products; improvements in productiveness; and an increase in turnover, profitability and employment (Guinet & Pilat, 1999). Innovation also provides protection or extension of market shares; improved operational efficiency and reputation; and cost reduction (Abernathy & Clark, 1985; Cooke & Mayes, 1996). In addition, there are non-financial advantages, such as a better social and environmental performance which may improve the market position of the firm (Elkington, 1997; Larson, 2000). Therefore, most entrepreneurs aspire to be innovative, although not everyone succeeds.

This research makes a distinction between innovation and imitation. Entrepreneurship includes both the introduction of innovation to the marketplace, as well as the entry to an existing market as a new imitative competitor (Koellinger, 2008). The current thinking about entrepreneurship is that entrepreneurs differ in the degree and type of innovative activity they introduce to the market (Shane, 2000; Davidsson, 2005; Cliff, Devereaux, & Greenwood, 2006; Koellinger, 2008). The definition of innovative and imitative entrepreneur is presented next.

Innovative entrepreneurs are individuals who have or are attempting 'to start businesses whose routines, competencies and offers vary significantly from those of existing organisation' (Koellinger, 2008, p.23). Their business idea qualifies as innovative, radical and may disturb existing markets. These innovative ideas have high uncertainty and complexity level (Knight, 1921). There is limited information available on consumer behaviour, potential competitors and how the product works (Koellinger, 2008). Innovative entrepreneurs need to be courageous and willing to take risk.

As for imitative entrepreneur, it is argued that a product, service or production process do not need to be new to the world for it to have an economic impact, the innovation just have to be new to the market under scrutiny (Bhaskaran, 2006; Koellinger, 2008). From the perspective of the market, it is argued that an individual that is making the choice to start a new business and is seeking opportunities to pursue finds only the expected pay-off relevant (Koellinger, 2008). Thus, they are only concerned about the competitive factors that directly affect them. Therefore, entrepreneurs are not concerned about being the most innovative, but are focused on staying ahead of their competition in the market they serve. Moreover, Aldrich (1999) argue that because of the complexity and uncertainty of the entrepreneurial activities, most entrepreneurs give in to social pressure and the security of imitating what others have done before. Therefore, most entrepreneurs reproduce existing products and services, instead of creating an innovative product or service. From this definition and Aldrich (1999), imitative entrepreneurs are defined as individuals who are trying to or have a business in 'an

established population whose routines, competencies and offers vary only minimally, if at all, from those of existing organisation' (Koellinger, 2008, p. 23). The activities of imitative entrepreneurs have small and incremental impact. Imitative entrepreneurs experience risk and uncertainty, but this is only to some extent. The key distinction between imitative and innovative entrepreneurs is that imitative entrepreneur lack the uncertainty and risk of novelty and discovery (Koellinger, 2008). To summarize, Innovation requires novelty, uncertainty and risk (Knight, 1921). While, imitation takes place in an existing market, where there are already customers and competitors.

## 2.2.2 Relationship between Social Entrepreneurship and Innovation

The role of the entrepreneur is pivotal for the innovation process (Hartman, Tower, & Sebora, 1994). As mentioned above, entrepreneurs differ in the degree and type of novelty they introduce to the economy (Davidsson, 2005; Koellinger, 2008; Shane, 2000). This has been a topic of discussion, since Schumpeter (1934) attempted to establish a linkage between entrepreneurs and innovation in theory. One of the competing paradigms in this discussion is; the entrepreneur paradigm (Sundbo, 1998). According to this paradigm, entrepreneurs are defined as innovators and their role is highlighted in the innovation process (Zhao, 2005; Sundbo, 1998). Hence, an entrepreneur is someone that starts a new venture on the basis of a new idea. This reinforces the behavioural notion rather than the occupational notion of an entrepreneur (see section 2.1.1); namely that an entrepreneur is someone who seizes an economic opportunity (Sternberg & Wennekers, 2005).

Entrepreneurship is found to be positively related to innovation (Zhao, 2005). This relationship helps flourish an organisation and is vital to achieving organisational success and sustainability. Also, Herbig, Golden and Dunphy (1994) argue that there is high correlation between venture creation and innovation potential. The probability to exploit innovative rather than imitative entrepreneurial activity is a function of various factors that influence business opportunity, individual creativity and alertness to business opportunity (Koellinger, 2008). By researching entrepreneurial behaviour and action, including innovation within a social enterprise, insight is gained on the extent to which social entrepreneur is stimulated or restricted and it is likely that such studies can contribute to what is known and understood about entrepreneurship (Shaw & De Bruin, 2013).

The main incentive for social entrepreneurs to innovate is the desire to change society and discomfort with the status-quo (Prabhu, 1999). Social entrepreneurs are defined as innovators that are able to actively contribute to social change by using creativeness and innovation orientation that is typical of the conventional entrepreneurial process (Johnson, 2000; Thompson, Alvy, & Lees, 2000; Hockerts, 2006; Mair & Marti, 2006). Furthermore, social entrepreneurs have also been defined as change

makers, since they carry out; new services, new quality of services, new methods of production, new production factors, new forms of organisations or new markets (Defourny & Nyssens, 2010).

It is argued that the innovativeness of social entrepreneurs may differ from the innovativeness of conventional entrepreneurs. Some studies find that social entrepreneurs are characterized by higher levels of innovativeness compared to conventional entrepreneurs (Dorado, 2006; Santos, 2012; Austin, Stevenson, & Wei-Skillem, 2006). Dorado (2006) argue that conventional entrepreneurs can start a business without being very innovative, while social entrepreneurs frequently require high levels of innovativeness. Austin, Stevenson and Wei-Skillem (2006) argue that social entrepreneurs are more innovative, since social entrepreneurs are often pulled into rapid growth by pressure from funders, demand for their products and services as well as pushed by their social missions to meet those needs.

The distinction between creating value and capturing value reinforces the arguments that social entrepreneurs are more innovative than conventional entrepreneurs. According to Santos (2012) the predominant focus on value creation rather than value capture is what distinguishes social entrepreneurs from conventional entrepreneurs. Value creation occurs when an activity creates value for society after accounting for the opportunity cost of all resources used in that activity (Santos, 2012). Whilst, value capture occurs when the entrepreneur can appropriate a portion of the value created after accounting for the cost of resources that he/she has mobilized (Mizik & Jakobson, 2003). Due to positive externalities, there are some activities that conventional entrepreneurs are not willing to do since it is difficult to capture value. Social entrepreneurs on the other hand are willing to do these activities, because of the substantial value that will be created for society. Hereby, social entrepreneurs are not restricted by the (in) ability to appropriate value from the innovative activity. This reinforces the findings of Defourny and Nyssens (2010) that social entrepreneurship focuses on outcomes and social impact rather than incomes. Hereby, innovation is link to social needs through the provision of such goods or services (Defourny & Nyssens, 2010). Following these arguments, we argue that social entrepreneurs are more likely to be innovate than conventional entrepreneurs.

In addition, it was noted that the innovation capability of social entrepreneurs are enhanced (Nga & Shamuganathan, 2010). According to some authors, social entrepreneurs develop their skill throughout the networking process, which involve the combination and exchange of intellectual and social capital (Nga & Shamuganathan, 2010; littunen, 2000; Nahapiet & Ghoshal, 1998). This also include exploring ways to penetrate unconventional 'bottom of the pyramid markets', which are neglected by conventional entrepreneurs due to the perceived high risk that do not justify financial returns (Hart & London, 2005). This makes them more innovative than conventional entrepreneurs.

Furthermore, it is argued that social entrepreneurs have higher innovativeness, because of their motivation to achieve social change. This motivation may go against rational and traditional economic thoughts and thereby it poses as a force for creative destruction (Hart & London, 2005; Jayasinghe, Thomas, & Wickramasinghe, 2008; Pittaway, 2005). This is reinforced by Schwartz (2012) who mentions that social entrepreneurs excel at reevaluating old thinking, they manage to break out of current paradigms and go further than conventional thinking. Besides, they think counterintuitively and rethink solutions.

In conclusions, the basic reasoning behind these literature suggest that social entrepreneurs are significantly different from conventional entrepreneurs with respect to their innovativeness. The reason is that social entrepreneurs are argued to have clear distinctive characteristics and goals. Hereby, the question arises if this argumentation is only based on assumptions and idealistic beliefs or if this can be supported by empirical research. By this means, the following hypothesis is formulated.

*Hypothesis 1: Social entrepreneurs have a greater likelihood of being innovative compared to conventional entrepreneurs.*

Considering that these arguments are based on conceptual or case-based articles this study contributes to social entrepreneurship literature by empirically analysing and extending on our current knowledge on this relationship.

## 2.3 Factors

To research the relationship between innovation and social entrepreneurship further some factors that can influence the likelihood of social entrepreneurs to be innovative are analysed. There are numerous factors that are relevant, when making a decision between innovative and imitative activity (Koellinger, 2008). These are for example, preferences and opportunity costs (Gifford, 1992; Hamilton & Harper, 1994), the availability of financial resources (Evans & Leighton, 1989) as well as the individual tolerance for uncertainty (Knight, 1921). Due to the scope of the research only two factors that can be of influence on the relationship between innovation and social entrepreneurship are analysed, namely risk tolerance and opportunity recognition. This will potentially contribute to our understanding of the relationship between social entrepreneurship and innovation.

### 2.3.1 Risk Tolerance

The ability to bear uncertainty and risk is required for entrepreneurship (Parker, 2009), this is no different for social entrepreneurs. Brooks (2009) along with several other authors have acknowledged that risk-bearing is a key characteristics of social entrepreneurs (Dees, 2001; Tan, Williams, & Tan,

2005; Peredo & McLean, 2006; Zahra et al., 2009). Social entrepreneurs have been defined as innovative, proactive risk takers that are attempting to create sustainable change to address current social problems (Praszkier & Nowak, 2012; Helm & Andersson, 2010). Furthermore, Mort, Weerawardena and Carnegie (2003) argue that social entrepreneurial activity is produced through three primary components of entrepreneurial orientation; innovation, proactivity and risk taking.

For the following reasons it is argued that risk tolerance of an individual may be the distinctive factor between social entrepreneurship and conventional entrepreneurship with regards to innovation. Prabhu (1999) suggests that the risk-taking behaviour is quite high given that the social experiments are conducted in good faith and there is learning experiences in the success and failures.

Furthermore, there is evidence that risk-tolerant people are more likely to be social entrepreneurs compared to conventional entrepreneurs (Hoogendoorn, Van der Zwan, & Thurik, 2011). However, it is mentioned that the risk that social and conventional entrepreneur face is different. The fear of personal failure and bankruptcy is more common among social entrepreneur rather than conventional entrepreneur (Hoogendoorn, Van der Zwan, & Thurik, 2011). Shaw and Carter (2007) find that social entrepreneurs experience less personal risks, since their funding is mostly from personal contacts, institutions or governments. Although, by using personal contacts to gain local support, they experience personal risk of a non-financial kind. The risk for social entrepreneurs are that they lose credibility and their network of personal relationship in case their venture fails (Shaw & Carter, 2007).

Lastly, as is mentioned in Section 2.2.2, social entrepreneur often penetrate markets that are neglected by conventional entrepreneurs due to their high risk (Hart & London, 2005). Moreover, social entrepreneurs, unlike conventional entrepreneurs, rarely allow external environment to determine whether or not they will do an activity (Dacin, Dacin, & Matear, 2010). They are more likely to pay attention to external resources and develop a creative mechanism to bypass the environmental barrier. Furthermore, it is also mentioned in that section that social entrepreneurs often go against rational or traditional economic thoughts (Nga & Shamuganathan, 2010). This means that the social aim of these entrepreneurs is what drives them to do an activity regardless of how risky it might be. They are driven by the need to serve greater number of people including the market that may not be feasible for conventional entrepreneurs or government (Hart & London, 2005). Therefore, the following hypothesis is formulated;

*Hypothesis 2: The positive relationship between social entrepreneurship and the likelihood of being innovative is stronger for risk tolerant individuals.*

## 2.3.2 Opportunities

Opportunities can be found in all walks of life, since the capital that is created can be social or financial. Opportunity recognition of an individual can be argued to have an effect on the relationship between social entrepreneurship and innovation. Researchers find that much of the research into social entrepreneurship and innovation relates to opportunity recognition (Lehner & Kansikas, 2012; Perrini, Vurro, & Costanzo, 2010). Therefore, the relationship between social entrepreneurship and innovation is analysed, taking into account the ability to recognize opportunities of the social entrepreneur. This may have an effect on the probability of being innovative of the entrepreneurs.

Mair and Marti (2004) argue that a central way to differentiate conventional entrepreneurs from social entrepreneurs is looking at their ability to recognize opportunities. Also, Dees (2001) argues that there might be differences between opportunities of conventional entrepreneurs and social entrepreneurs. Social entrepreneurs recognize and relentlessly pursue opportunities to serve their social mission, while conventional entrepreneurs pursue opportunities that are connected with their background (Dees, 2001). They pursue such opportunities, since it allow them to have an advantageous position to identify income-generating opportunities.

The ability to recognize opportunities may be greater for a social entrepreneur than a conventional entrepreneur for the following reasons. It is argued that social entrepreneurs are differentiated from conventional entrepreneurs by their ability to identify opportunities (Roberts & Woods, 2005; Peredo & McLean, 2006; Zahra et al., 2009) and their pursuit of opportunities in order to stimulate social change (Roberts & Woods, 2005; Mair & Marti, 2006; Peredo & McLean, 2006; Zahra et al., 2009).

In addition, Austin, Stevenson and Wei-Skillem (2006) argue that when comparing the nature of the opportunities in the commercial and the social sector, more opportunities exist in the social sector rather than the commercial. They find that the opportunity dimension of social and conventional entrepreneur is the most distinct, considering the fundamental differences in missions and responses to market failures. Whilst conventional entrepreneurs tend to focus on breakthrough and new needs (Austin, Stevenson, & Wei-Skillem, 2006), social entrepreneurs often focus on serving basic, long-term needs more effectively through innovative approaches. It can also be observed that the focus of a conventional entrepreneur is that an opportunity must have a large or growing total market size and be a structurally attractive industry (Austin, Stevenson, & Wei-Skillem, 2006), while for a social entrepreneur, a more than sufficient market size is enough if a social need, demand or market failure is recognized.

Furthermore, with regards to the scope of the opportunities for social entrepreneurs, this is relatively wide since social entrepreneurs are able to pursue ventures that are financially self- sustaining, as well

as those that require donor subsidies (Austin, Stevenson, & Wei-Skillem, 2006). Also, social entrepreneurs have an inherent incentive to find opportunities where others are not even looking and they have incentive to develop innovative approaches that turns the opportunity into a viable enterprise (Dees, 2008). Thus, social entrepreneurs are not only looking, as conventional entrepreneurs, for the best profit opportunities, but are looking to solve a social problem. Hereby, they find different entrepreneurial opportunities, so much so that they find that opportunities for social entrepreneurs are often more than the resources available to address them (Dees, 2008). Hereby, it can be expected that opportunities for social entrepreneurs are greater than for conventional entrepreneurs.

Moreover, it can be argued that the existence of market imperfection is the reason that social entrepreneurs are more innovative than conventional entrepreneurs. Picot, Laub and Schneider (1990) argue that market imperfections offer opportunities for entrepreneurial activity. There are four types of market imperfections; inefficient firms, externalities, flawed pricing mechanisms and imperfectly distributed information. These provide opportunities for the creation of new ventures, whose product or services are focused on sustainability. Here, follows the 4 types of imperfections (Cohen & Winn, 2007).

Firstly, there are inefficient firms. Most firms only use a fraction of the potential efficiencies available from natural resources. This has a negative impact on the market performance (Cohen & Winn, 2007). This market imperfection makes room for social entrepreneurs to identify and explore opportunities to increase efficiency of resource allocation (Kirchgeorg, 1999; Benyus, 1997). Secondly, there are externalities; positive externality occurs when a third party can benefit from the production or consumption of a good without incurring the full costs corresponding to the true value of the benefit received, while negative externality occurs when a third party incur the cost from production or consumption of products without receiving equivalent benefits. Both the negative and positive externalities generate opportunities for social entrepreneurs. Thirdly, due to flawed pricing mechanisms there is a false belief that many natural resources are inexhaustible. This leads to undervalued and underprized resources. As natural resources are valued and priced more accurately, the demand for more renewable factors will increase and thus the opportunities for social entrepreneurs. Lastly, information asymmetry is a primary cause of market failure (Akerlof, 1970). The imperfect information across markets has contributed to unsustainable production and consumption patterns. Picot, Laub and Schneider (1990) argue that 'the Innovative entrepreneurs can act as an arbitrageur of information' (Picot, Laub, & Schneider, 1990, p. 191).  Social entrepreneurs can help by introducing innovative solutions which can lead markets towards sustainability.

The following authors reinforce the belief that market failure can be a reason for an increase in opportunities of social entrepreneurs and subsequently their high innovativeness. Zahra et al. (2009) build on the work of Hayek, Kirzner and Schumpeter and argue that social entrepreneur typically exploit opportunities and market failures by filling gaps to underserved customers in order to introduce reforms and innovation.

Dees (2001) argue that social entrepreneurs seek and exploit opportunities by their realization of a market failure; they find there opportunities where markets are not doing a good job at valuing the social values; where there are public goods; and where there are benefits for people that cannot afford to pay (Dees, 2001).

Mulgan et al. (2007) argue that market failures in public and environmental goods can only be addressed by social entrepreneurs rather than conventional entrepreneurs. The reason for this is that social entrepreneurship has been conceptualized as being a process of change in the delivery of public goods and social/environmental services (Nicholls, 2010). Cohen and Winn (2007) suggest that market imperfection can provide significant opportunities for the creation of radical technologies and innovative business models, while at the same time enabling founders to obtain financial and social value.

As a result of these market failures and the nature of the opportunities, it is argued that the opportunity recognition of social entrepreneur is what makes social entrepreneurs more likely to be innovative compared to conventional entrepreneur. Hereby, the next hypothesis is formulated.

*Hypothesis 3: The positive relationship between social entrepreneurs and the likelihood of being innovative is stronger for individuals with the ability to recognize opportunities.*

*To summarize, social and conventional entrepreneurs are expected to differ in their level of innovativeness. Furthermore, we examine two factors that can affect this relationship, namely risk tolerance and opportunity recognition. The method used to examine the hypotheses are explained in the following chapter.  The three hypotheses are;*

- *H1: Social entrepreneurs have a greater likelihood of being innovative compared to conventional entrepreneurs.*
- *H2: The positive relationship between social entrepreneurship and the likelihood of being innovative is stronger for risk tolerant individuals.*
- *H3: The positive relationship between social entrepreneurs and the likelihood of being innovative is stronger for individuals with the ability to recognize opportunities.*

# Chapter 3 Data and Methodology

*In this chapter there is a description of the data, measures that are used and explanation on how variables are coded. Furthermore, there is a description of the applied research method and models. The models are presented in the order of the hypotheses presented in Chapter 2.*

## 3.1 Data

This research makes use of the adult population survey of Global Entrepreneurship Monitor (GEM) 2009. GEM is the most widely recognized database for its study of the prevalence, determinants and consequences of entrepreneurial activity in cross-country research (Koellinger, 2008). On an annual basis, the GEM surveys over 150,000 people across 50 countries (Lepoutre et al., 2013) and it is widely acknowledged as the best source of comparative entrepreneurship data in the world (Shorrock, 2008). It facilitates cross-country comparison of entrepreneurial activity by using exact same measurement approach in all countries involved in the study (Reynolds, et al., 2005). More importantly, the GEM data of 2009 is used since it is a special issue on the global perspective of social entrepreneurship. In this dataset, there are questions about social entrepreneurship which are not asked in the other issues. The sample consist of 16,000 observations after dropping the missing values from the data. The large reduction in the sample can be explained by the unanswered questions in the survey regarding social entrepreneurship and the other variables. The benefit of dropping missing values is that it allows us to analyse the same group of people throughout the whole study. The following sections present a clear description of the variables that are used in this study.

### 3.1.1 Innovation

The individuals in the survey have also answered some questions about innovation. They were asked questions about the novelty of the product or services they provide to their potential customers and also the degree of competitors that are in the market. The survey questions regarding innovativeness are the following:

1.  Will all, some, or none of your potential customers consider this product or service new and unfamiliar?
2.  Right now, are there many, few, or no other businesses offering the same products or services to your potential customers?
3.  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?

This study follows Koellinger (2008) on the coding of the variable innovation, which differentiates between imitative and innovative entrepreneur. Innovative entrepreneurs are those who carry out any type of innovative behaviour (Koellinger, 2008), whilst imitative entrepreneurs are those who have neither a product, nor a process innovation. Furthermore, they expect many competitors in the market they enter. Thus, entrepreneurs who answered 'none will consider this new and unfamiliar' to question 1, 'many business competitors' to question 2 and 'between one to five years or longer than five years' to question 3 are coded as *imitative entrepreneurs*. Individuals are coded as *innovative entrepreneurs* if they answered 'all or some' to question 1, 'few or no business competitors' to question 2 and 'less than a year' to question 3. The reference category is imitative entrepreneur. The sample consists of 16,000 entrepreneurs from which 39% of the entrepreneurs are imitative and 61% of the entrepreneurs are innovative.

### 3.1.2 Independent Variables

In the special issue of the GEM data of 2009, they asked both nascent entrepreneurs and young business owners a question regarding social entrepreneurship. Nascent entrepreneurs are 'individuals who have during the past 12 months, taken tangible action to start a new venture, would personally own all or part of the new firm, would actively participate in the day-to-day management of the new firm, and have not yet paid salaries for anyone for more than 3 months' (Lepoutre et al., 2013, p. 697). Young business owners are defined 'as individuals who are currently actively managing a new firm, personally own all or part of the new firm, and the firms in question is not more than 42 months old' (Lepoutre et al., 2013, p. 697). The individuals that were excluded are those that have discontinued their business, those who are expecting to start business within 3 years and those that have funded a business. This is the reason why there are only nascent entrepreneurs and young business owners included in this study. These are individuals who answered the following questions from the GEM survey:

- Are you alone or with others, currently trying to start a new business, including any self-employment or selling any goods and services to others? (Yes, no, don't know/refused)
- Are you alone or with others, currently trying to start a new business or new venture for your employer as part of your normal work? (Yes, no, don't know/refused)
- Are you alone or with others, currently the owner of a company you help manage, self-employed or selling any goods or services to others? (Yes, no, don't know/refused)

**Social entrepreneur.** For the individuals that mentioned 'yes' to one of the three questions mentioned above, there was a follow-up question. These entrepreneurs were asked to allocate 100 points across three categories pertaining to the goals of the organisation. These three categories are; economic,

societal and environment value. Following the double bottom line definition of social entrepreneur in Chapter 2, individuals are coded as social entrepreneurs if they rate societal (or environmental) and economic value relatively equal. An individual is coded as social entrepreneur *(SE)*, if he or she gave between 40 and 50 points for economic value and the rest on societal and environmental value. Furthermore, an individual is coded as Conventional entrepreneur (CE), if he or she gave more than 50 points for economic value. This follows the second definition of social entrepreneur that is used in this study, namely that social entrepreneurs have as primary goal social impact.

This coding makes a distinction between 3 categories; those who gave economic value points between 0-39, which we consider are mainly non-profit organisation; 40-50, which are social entrepreneurs; and 51-100, which are conventional entrepreneurs. An example is; an individual who gave 40-30-30 points respectively to economic, societal and environmental goals is coded as a social entrepreneur; while an individual who gave 55-15-30 points respectively to economic, societal and environmental goals is coded as a conventional entrepreneur. Lastly, an individual that gave 20-40-40 points respectively to economic, societal and environmental goals is excluded from the sample. The reason for this is that these individuals are considered as extreme social entrepreneurs or non-profit organisations and therefore do not fit the criteria of a double bottom line.

This measurement for social entrepreneurship has been previously used by other authors, such as Lepoutre et al. (2013). In their article, they chose a broad definition of social entrepreneur. Thus, they rate an individual as social entrepreneur, if they rated either social or environmental value higher than economic value. We chose to be stricter, and cut out extreme social entrepreneurs from the study, these are possibly individuals with non-profit ventures. Furthermore, the two definition of social entrepreneur presented in Chapter 2 are used. Namely that social entrepreneurs have as primary goal to create societal value, thus will not give more than 50 points to economic value. Secondly, social entrepreneurs focus on both economic and social return (the double bottom line), hereby entrepreneur will not give less than 40 points to economic value. The variable for social entrepreneurship (SE) is binomial with value 0 as the conventional entrepreneur and value 1 as social entrepreneur. After coding the variable *SE*, our sample consist of 11,324 conventional entrepreneurs (71%) and 4,676 social entrepreneurs (29%).

**Fear of failure**. This serves as a proxy for downside risk tolerance (Koellinger, 2008). Respondent were asked if fear of failure would prevent them from starting a business (fearfail). This variable is also a dummy variable, value 0 is yes and value 1 is no. Most of the individuals in our sample mention that they do not have fear of failure (approx. 73%), hereby indicating that they are risk tolerant. We expect

since innovation is inherently more risky and uncertain (Koellinger, 2008), that entrepreneurs who are more risk tolerant are also more innovative.

**Opportunity.** Respondents were also asked if in the next six months there will be good opportunities for starting a business in the area where they live (opport). Here, respondents could answer no (value 0) or yes (value 1). About 47% of the individuals in the sample answered that there will be good business opportunities in the next six months.

### 3.1.4 Control Variables

As control variables we make use of the demographic factors that affects entrepreneurship and innovation, such as age, age squared, gender (male), educational attainment (edu) and country of residence (country). A description can be found in Table 2.

*Table 2: Descriptive Statistics of the Independent and Control Variables*

| Variables | Mean | SD | Type | Value | Description | Frequency | Percentage |
|---|---|---|---|---|---|---|---|
| SE | 0.29 | 0.46 | Binomial | 0 | Conventional Entrepreneurship | 11,324 | 70,78% |
| | | | | 1 | Social Entrepreneurship | 4,676 | 29,23% |
| Opport(yes) | 0.47 | 0.50 | Binomial | 0 | No | 8,529 | 53.31% |
| | | | | 1 | Yes | 7,471 | 46.69% |
| Fearfail(no) | 0.73 | 0.44 | Binomial | 0 | Yes (risk averse) | 4,304 | 26,90 |
| | | | | 1 | No (risk-tolerant) | 11,696 | 73.10% |
| Age | 41.62 | 12.30 | Numerical | 16-91 | 42 (mean) | | |
| Male | 0.63 | 0.48 | Binomial | 0 | Female | 5,920 | 37,00% |
| | | | | 1 | Male | 10,080 | 63.00% |
| Edu | 1.92 | 1.09 | Categorical | 0 | No education | 2,222 | 13.95% |
| | | | | 1 | Elementary education | 2,887 | 18.04% |
| | | | | 2 | Secondary education | 5,314 | 33.21% |
| | | | | 3 | Post-secondary education | 5,028 | 31.43% |
| | | | | 4 | Graduate experience | 539 | 3.37% |
| Country | - | - | Categorical | - | Country-specification | (See Table 3) | |

Note: N=16,000. SD is standard deviation.

**Age.** Age is added as control variable, since there are substantial difference between the value priorities of older and younger individuals (Inglehart, 2000). The values of these individuals are shaped by different experience in their formative years and this can affect the individuals' probability of being innovative. The variable age is a numerical variable. The study consists of conventional entrepreneurs between ages of 16 to 91 years old and social entrepreneurs between 18-86 years old (Appendix A). The average age in our sample is 42 years old (Table 2).

**Age squared.** An age squared term is included as control variable. A U-shaped relationship between age and innovation is expected, since there is evidence that age has a non-linear relationship with social and conventional entrepreneurship (Evans & Leighton, 1989). We expect that this is the same for the relationship between age and innovation. According to Parker (2008), there are two dominant types of individuals that engage in social entrepreneurship. Firstly, there are idealistic individuals who become social entrepreneurs when they are young and secondly there are wealthy individuals who become social entrepreneurs later in life, after a career in paid employer or as a conventional entrepreneur.

**Gender.** The variable for gender, named *male,* is also included. Gender differences has been observed throughout entrepreneurship and innovation literature. Male entrepreneurs are more innovative than females according to (Carter et al., 2003). This is a dummy variable with value 0 for female individuals and value 1 for male individuals. From the total sample 63% of the individuals are male (Table 2).

**Educational attainment.** This variable is often used as proxy for potential skills (Koellinger, Minniti, & Schade, 2007). It has been suggested that education play an important role in the ability to create innovative activities (Mumford & Gustafson, 1988). Education have been argued to be one of the internal factor that influence innovative behaviours of individuals (Marcati, Guido, & Peluso, 2008). This factor refers to the stock of experience, skills and knowledge accumulation over time (Batjargal, 2007). The variable for education is a categorical variable with 4 categories, which are; no education (the reference category), primary education (value 1), secondary education (value 2), post-secondary education (value 3) and graduate experience (value 4). Most of the individuals in the sample have secondary education or more (Table 2).

**Country.** Country dummies are included to control for the influence of country specific factors. These are for example; demographic, income, culture, institutional or political effects. Hereby, country dummies are capturing all potentially relevant factors at the country level that may influence the degree of innovativeness of the entrepreneurs (Koellinger, 2008). An example is an environmental condition, this can have an effect on the distribution of entrepreneurial innovativeness. Table 3 presents the number of observation per country of the entrepreneurial types and the number of innovation. This sample consists of 42 countries, from which the highest number of social entrepreneurs are found in Spain, United Kingdom, Chile and Uganda (>800).

Lastly, in Appendix A, it can be observed that conventional and social entrepreneurs have similar answers to the questions in the dataset. Even though conventional entrepreneurs (71%) are more than social entrepreneurs (29%). The majority of entrepreneurs, social or conventional, state that they

# Which entrepreneurial type is more innovative?

*Table 3: Number of Observations per Entrepreneurial Type and Innovation Type*

| Country | Conventional Entrepreneur | | | | | | Social Entrepreneur | | | | | | Total N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Imitative | | Innovative | | Total | | Imitative | | Innovative | | Total | | |
| United States | 118 | 46% | 138 | 54% | 256 | | 34 | 31% | 77 | 69% | 111 | | 367 |
| South Africa | 16 | 35% | 30 | 65% | 46 | | 12 | 22% | 43 | 78% | 55 | | 101 |
| Greece | 100 | 44% | 126 | 56% | 226 | | 29 | 39% | 46 | 61% | 75 | | 301 |
| Netherlands | 61 | 48% | 67 | 52% | 128 | | 28 | 39% | 44 | 61% | 72 | | 200 |
| Belgium | 44 | 39% | 68 | 61% | 112 | | 17 | 35% | 31 | 65% | 48 | | 160 |
| Spain | 730 | 51% | 695 | 49% | 1,425 | | 338 | 45% | 415 | 55% | 753 | | 2178 |
| Italy | 44 | 52% | 41 | 48% | 85 | | 48 | 55% | 40 | 45% | 88 | | 173 |
| Switzerland | 77 | 53% | 67 | 47% | 144 | | 15 | 44% | 19 | 56% | 34 | | 178 |
| United Kingdom | 439 | 42% | 606 | 58% | 1,045 | | 151 | 36% | 264 | 64% | 415 | | 1460 |
| Denmark | 37 | 47% | 41 | 53% | 78 | | 14 | 38% | 23 | 62% | 37 | | 115 |
| Norway | 53 | 45% | 66 | 55% | 119 | | 18 | 28% | 46 | 72% | 64 | | 183 |
| Germany | 229 | 48% | 244 | 52% | 473 | | 42 | 46% | 49 | 54% | 91 | | 564 |
| Peru | 31 | 12% | 224 | 88% | 255 | | 14 | 11% | 111 | 89% | 125 | | 380 |
| Argentina | 44 | 25% | 134 | 75% | 178 | | 26 | 17% | 127 | 83% | 153 | | 331 |
| Brazil | 167 | 44% | 213 | 56% | 380 | | 25 | 37% | 42 | 63% | 67 | | 447 |
| Chile | 29 | 6% | 448 | 94% | 477 | | 14 | 4% | 329 | 96% | 343 | | 820 |
| Colombia | 161 | 43% | 217 | 57% | 378 | | 70 | 37% | 120 | 63% | 190 | | 568 |
| Japan | 19 | 49% | 20 | 51% | 39 | | 25 | 44% | 32 | 56% | 57 | | 96 |
| Korea | 70 | 42% | 96 | 58% | 166 | | 30 | 38% | 50 | 63% | 80 | | 246 |
| China | 119 | 21% | 441 | 79% | 560 | | 35 | 16% | 181 | 84% | 216 | | 776 |
| Iran | 84 | 30% | 199 | 70% | 283 | | 41 | 38% | 66 | 62% | 107 | | 390 |
| Morocco | 130 | 69% | 58 | 31% | 188 | | 58 | 48% | 64 | 52% | 122 | | 310 |
| Uganda | 493 | 64% | 274 | 36% | 767 | | 36 | 46% | 42 | 54% | 78 | | 845 |
| Iceland | 67 | 49% | 69 | 51% | 136 | | 22 | 30% | 51 | 70% | 73 | | 209 |
| Finland | 47 | 48% | 51 | 52% | 98 | | 28 | 47% | 32 | 53% | 60 | | 158 |
| Latvia | 79 | 46% | 91 | 54% | 170 | | 39 | 43% | 52 | 57% | 91 | | 261 |
| Serbia | 87 | 47% | 99 | 53% | 186 | | 10 | 45% | 12 | 55% | 22 | | 208 |
| Croatia | 41 | 48% | 45 | 52% | 86 | | 16 | 31% | 35 | 69% | 51 | | 137 |
| Slovenia | 37 | 42% | 51 | 58% | 88 | | 31 | 43% | 41 | 57% | 72 | | 160 |
| Bosnia and Herzegovina | 12 | 31% | 27 | 69% | 39 | | 15 | 31% | 34 | 69% | 49 | | 88 |
| Guatemala | 37 | 15% | 218 | 85% | 255 | | 10 | 15% | 57 | 85% | 67 | | 322 |
| Panama | 81 | 45% | 98 | 55% | 179 | | 25 | 56% | 20 | 44% | 45 | | 224 |
| Venezuela | 46 | 43% | 62 | 57% | 108 | | 16 | 38% | 26 | 62% | 42 | | 150 |
| Ecuador | 284 | 57% | 215 | 43% | 499 | | 15 | 43% | 20 | 57% | 35 | | 534 |
| Uruguay | 43 | 31% | 94 | 69% | 137 | | 18 | 21% | 68 | 79% | 86 | | 223 |
| Tonga | 10 | 6% | 155 | 94% | 165 | | 9 | 18% | 41 | 82% | 50 | | 215 |
| Dominican Republic | 93 | 36% | 166 | 64% | 259 | | 51 | 42% | 70 | 58% | 121 | | 380 |
| Jamaica | 125 | 43% | 166 | 57% | 291 | | 50 | 38% | 83 | 62% | 133 | | 424 |
| Lebanon | 162 | 43% | 215 | 57% | 377 | | 21 | 33% | 42 | 67% | 63 | | 440 |
| Jordan | 80 | 37% | 138 | 63% | 218 | | 13 | 39% | 20 | 61% | 33 | | 251 |
| Syria | 33 | 33% | 66 | 67% | 99 | | 35 | 32% | 74 | 68% | 109 | | 208 |
| United Arab Emirates | 38 | 30% | 88 | 70% | 126 | | 21 | 23% | 72 | 77% | 93 | | 219 |
| Total | 4,697 | 41% | 6,627 | 59% | 11,324 | | 1,565 | 33% | 3,111 | 67% | 4,676 | | 16,000 |

are not good at recognizing opportunities. Also, the majority of both entrepreneurial types indicate that they do not have fear of failure. There are more males than females in the sample for both types of entrepreneur and the average age is 42. Most social and conventional entrepreneurs in our sample have secondary or post-secondary education.

## 3.2 Methodology

Firstly, binomial logistic regressions are estimated to test the first hypothesis with dependent variable *innovation and t*he independent variable *SE*. To test the second hypothesis, we will include in Model 4 an interaction term between *SE* and *fearfail*. This is to test if fear of failure has an effect on the relationship between social entrepreneurship and innovation. Also, an interaction term between variable *SE* and *opport* is included in Model 5 to test the third hypothesis. Moreover, the following control variables are taken into account age, age squared, gender, educational attainment and country dummies.

To be able to interpret the magnitude of the variables, the average marginal effects are calculated. This measures the average increase or decrease in the probability of being an innovative entrepreneur as a result of an increase in a particular variable. This is holding all other variables in the model constant. Furthermore, the standard errors are clustered by country, since it is expected that there could be correlation between the standard errors within different countries. However, it is not expected that there is a correlation between the different countries. Therefore by clustering the standard errors on countries, correlation within countries are allowed, but not correlation between countries.

The aim of the research is to find out what the relationship is between social entrepreneurship and innovation. Though, caution is taken in interpreting causal relationships due to potential endogeneity problems. Endogeneity problem can occur in the case of reverse causality (Dowd & Town, 2002). Social entrepreneurship can be a cause of innovation, but the relationship can also be the opposite. From this study it is not possible to conclude which one is true. Thus, this research increases our knowledge on how social and conventional entrepreneurs are related to innovation, however it does not imply a causal relationship.

*In conclusion, there are five logistic regression being estimated to answer the three hypotheses. Control variables include age, age squared, education, gender and country dummies. Subsequently, average marginal effects are estimated to be able to interpret the coefficients. The result are presented in the next chapter.*

# Chapter 4 Results

*In this chapter, the results are presented. Some preliminary tests are done, which include the correlation matrix, t-test and chi-square test. Then, the main results are presented which include the effect of social entrepreneurship on innovation and the factors that may influence this relationship. Lastly, an explorative analysis is done to examine the country-specific effects further.*

## 4.1 Preliminary Tests

Before estimating the logistic regressions, there are some preliminary tests that are performed. Both the Spearman as well as the Pearson correlation test are used. The Spearman correlation test is used for the relationship between the categorical variables (Myers & Sirois, 2006). Whilst Pearson correlation test is used for the correlation between age and the other independent variables, since these variable are numerical. The correlations are estimated to check if there are high correlations between the variables, since this may lead to multicollinearity. Furthermore, the variance inflation (VIF) score is calculated to test if there is multicollinearity. If the VIF score is lower than 10, then there is no multicollinearity in the model (Hair et al., 2006). Finally, the t-test for numerical variables and chi-square test for categorical variables is estimated. This is to examine the relationships between innovation and each independent variable.

### 4.1.1 Correlations

The correlation matrix is presented in Table 4. Most of the variables have low correlation with each other (<0.20), with exception of the age variables. Here it can be observed that there is high correlation between age and age squared. This is as expected, since age squared is generated by the age variable. The VIF score is 8.61, thus it can be concluded that there is no strong indication of multicollinearity.

*Table 4: Correlation Matrix*

|  | Age | Age squared | Male | Education | Opportunity | Fear of failure | Social Entrepreneur |
|---|---|---|---|---|---|---|---|
| Age | 1.00 |  |  |  |  |  |  |
| Age squared | 0.99*** | 1.00 |  |  |  |  |  |
| Male | 0.05*** | 0.05*** | 1.00 |  |  |  |  |
| Education | 0.01 | 0.01 | 0.06*** | 1.00 |  |  |  |
| Opportunity | -0.13*** | -0.13*** | 0.01 | -0.05*** | 1.00 |  |  |
| Fear of Failure | -0.01* | 0.01* | 0.07*** | 0.05*** | 0.12** | 1.00 |  |
| Social Entrepreneur | -0.005 | -0.005 | -0.02*** | 0.06*** | -0.01 | 0.01 | 1.00 |

Note: N=16,000. Significance level is * $P<0.1$, ** $P<0.05$, *** $P<0.01$. VIF=8.61

### 4.1.2 The Relationship between Dependent and Independent Variables

The relationships between innovation and the independent variables are shown in Table 5. There is a significant relationship between social entrepreneurs and innovation. Furthermore, it can be observed that age, age squared, male, education, fear of failure and opportunity also show significant relationship with innovation. Although, the significance level for the variable *fearfail* is only significant at a 5% significant level, while the other variables are at a 1% significance level.

*Table 5: Relationship between Dependent and Independent Variables*

| Variable | Innovation | |
| --- | --- | --- |
| | t-test | chi-square test |
| Age | 5.51*** | |
| Age squared | 4.57*** | |
| Male | | 28.08*** |
| Education | | 93.68*** |
| Opportunity | | 104.57*** |
| Fear of Failure | | 6.08** |
| Country | | 0.001*** |
| Social Entrepreneur | | 89.13*** |

Note: t-value and chi-square value is presented. Significance level is * $P<0.1$, ** $P<0.05$, *** $P<0.01$

## 4.2 Main Results

The results of the estimations with dependent variable innovation are presented in Table 6, Model 1 presents the effect of social entrepreneurship on the likelihood of being innovative. Model 2 and 3 respectively include variable *fearfail* and *opport*. Lastly, Model 4 and 5 include the interaction term between each factor and the variable *SE*.

### 4.2.1 Hypotheses

The results can be found in Table 6. The estimation results show that social entrepreneurs are on average approximately 5% more likely to be innovative compared to conventional entrepreneurs in Model 1 to 3. These are significant at a 1% significance level. In Model 4 and 5 the coefficients decrease and are respectively 3% and 4%. This is significant at a 5% significance level in Model 4 and at a 1% significance level in Model 5. Hereby, it can be concluded that Hypothesis 1 can be accepted, that social entrepreneurs are more likely to be innovative than conventional entrepreneurs.

Which entrepreneurial type is more innovative?

Model 2 presents the estimation results with the variable *fearfail* included. It can be observed that an individual that does not have fear of failure is 2% more likely to be innovative compared to someone that does have fear of failure. This coefficient is at a 10% significance level. Model 3 presents the estimation results with the variable *opport* included. It can be observed that entrepreneurs that said they have the ability to recognize opportunities are on average 6% more likely to be innovative compared to entrepreneurs that do not have the ability to recognize opportunities. This coefficient is at a 1% significance level. Although, it can be observed that the two factors, opportunity recognition and fear of failure, have an effect on the probability of being innovative of the entrepreneurs, it can also be observed that the coefficient of SE is not affected by these factors. Hereby already giving an indication that Hypotheses 2 and 3 are false.

*Table 6: Average Marginal Effects on the Probability of being Innovative*

|  | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
|---|---|---|---|---|---|
| SE | 0.05*** | 0.05*** | 0.05*** | 0.03** | 0.04*** |
|  | (0.01) | (0.01) | (0.01) | (0.02) | (0.01) |
| Fearfail(no) |  | 0.02* |  | 0.01 |  |
|  |  | (0.01) |  | (0.01) |  |
| Opport(yes) |  |  | 0.06*** |  | 0.05*** |
|  |  |  | (0.01) |  | (0.01) |
| Fearfail*SE |  |  |  | 0.03 |  |
|  |  |  |  | (0.02) |  |
| Opport*SE |  |  |  |  | 0.03 |
|  |  |  |  |  | (0.02) |
| Male | -0.04*** | -0.04*** | -0.04*** | -0.04*** | -0.04*** |
|  | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Age | -0.01*** | -0.01*** | -0.01*** | -0.01*** | -0.01*** |
|  | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Age squared | 0.00*** | 0.00*** | 0.00*** | 0.00*** | 0.00*** |
|  | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| No Education (ref.cat) |  |  |  |  |  |
| Elementary education | 0.05* | 0.05* | 0.05* | 0.05* | 0.05* |
|  | (0.03) | (0.03) | (0.03) | (0.03) | (0.03) |
| Secondary education | 0.05* | 0.05* | 0.05* | 0.05* | 0.05* |
|  | (0.03) | (0.03) | (0.03) | (0.03) | (0.03) |
| Post-secondary education | 0.08*** | 0.08*** | 0.08*** | 0.08*** | 0.08*** |
|  | (0.03) | (0.03) | (0.03) | (0.03) | (0.03) |
| Graduate experience | 0.14*** | 0.14*** | 0.14*** | 0.14*** | 0.14*** |
|  | (0.03) | (0.03) | (0.03) | (0.03) | (0.03) |
| Country dummies | Yes | Yes | Yes | Yes | Yes |
| Pseudo R^2 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 |
| *N* | 16,000 | 16,000 | 16,000 | 16,000 | 16,000 |

Note: Country dummies are shown in Appendix A. Standard errors in parentheses. * *P<0.1*, ** *P<0.05*, *** *P<0.01*

After estimating Model 4 and 5 which included the interaction terms *fearfail* SE* and *opport*SE*, the following is concluded. Model 4 shows that in contrast to Model 2, fear of failure has no significant effect on the probability of being innovative. Moreover, the interaction term *fearfail*SE* is not significant, as was expected from Model 2. Model 5 shows that opportunity recognition is still significant, this has decreased to 5%. The interaction term *opport*SE,* on the other hand, has no significant effect on the likelihood of being innovative. Hereby, it can be concluded that both factors, risk tolerance and opportunity recognition, do not have an effect on the relationship between social entrepreneurship and the likelihood of being innovative. Thus, we reject Hypotheses 2 and 3.

### 4.2.2 Control Variables

Following the Logistic estimation results, it can be concluded that males are significantly less innovative than females. This is at a 1% significance level. This result is surprising, since males are usually more innovative than females (Carter et al., 2003). The findings of Koellinger (2008) also show that females are more innovative than males, although it is worth mentioning that the sample of the article of Koellinger (2008) is also from GEM data of 2009. Furthermore, age and age squared are also significant at a 1% significance level. Age has a negative effect, whilst age squared has a positive effect, which indicates that age has a U-shaped relationship with innovation. This means that younger and older entrepreneurs are more innovative than middle-aged entrepreneurs. Although, this can be as suggested by Section 3.1.4 due to the fact that younger and older individuals are more likely to become entrepreneurs (Evans & Leighton, 1989). Educational attainment also plays a role on the likelihood of being innovative. It can be observed that the more educational attainment entrepreneurs have the more likely they are to be innovative. Entrepreneurs with graduate experience are the most likely to be innovative compared to entrepreneurs with no education (14%). This is at a significance level of 1%. Entrepreneurs with primary and secondary education are the least likely to be innovative compared to entrepreneurs without education (both 5%) and both are significant at a 10% significance level.

Lastly, all our models include 42 country dummies that captures all possible factors at the country level that could be of influence on the probability of being innovative. Hereby, the aim is to avoid omitted variable bias from missing environmental factors (Koellinger, 2008). The reference category is the United States (US). The estimation results for the county dummies are shown in Appendix B. It shows that most of the countries in our sample are significant; some are more innovative than the US, such as South-Africa, Uruguay and China; whilst some are less innovative than US, namely Spain, Switzerland and Morocco. The country with the highest effect on the likelihood of being innovative relative to US is Chile, which indicate that entrepreneurs from Chile are 37% more likely to be innovative compared to those in United States. These differences in innovation level across countries

can be due to the different level of economic development that each country is in. This is analysed in the next section.

To summarize, the results indicate that Hypothesis 1 can be accepted and Hypothesis 2 and 3 can be rejected. Thus, social entrepreneurs are more likely to be innovative compared to conventional entrepreneurs. Although, this relationship is not affected by fear of failure or the ability to recognize opportunities of the entrepreneurs.

## 4.3 Explorative Analysis

After looking at the coefficients of the country dummies (Appendix B), it can be observed that there are significant differences between the countries and their effect on the probability of being innovative. These differences can be attributed to the economic development of the country. To research this further an explorative analysis is done including different stages of economic development. Hereby, it is researched if the development level of a country has an impact on the entrepreneurs' likelihood of being innovative. Additionally, the effect of different level of economic development on the relationship between *SE* and *innovation* is analysed.

This explorative research has also some social contribution. It can be observed that attention to social entrepreneurship has increased significantly in both the developing and developed world (Lepoutre et al., 2013). Policy makers find it important to gain Insight in the relationship between entrepreneurship and economic development across countries, this provides them with a guide for their endeavours (Carree et al., 2007). Since it can be concluded that there is difference between social and conventional entrepreneurship, the need to find out how this relationship is across countries with different economic development is also important. This will make it easier for national policy makers to tailor socio-economic programs to the development context of their country (Bosma & Levie, 2010).

Koellinger (2008) argue that innovative entrepreneurs are significantly more likely to occur in highly developed countries, while imitative entrepreneurs are more likely to prevail in countries that are less developed. Hereby, the question arises if social entrepreneurs differ from conventional entrepreneurs in this aspect also.

The possibility exist that there are differences between these entrepreneurial types, when a closer look is taken at the level economic development. Firstly, it might be expected that there is a higher prevalence of social entrepreneurship in areas with higher levels of social pains, state failures and/or lower levels of civil society involvement (Lepoutre et al., 2013). On the other hand, since Individuals in these countries must pay more attention to survival, they might favour conventional above social

entrepreneurship in the context of payoff. This argument can be reinforced by the higher level of necessity entrepreneurship observed in developing countries (Bosma & Levie, 2010).

Many scholars have emphasized the connection between culture and economic development (DiMaggio, 1994; Inglehart, 1997; Hofstede, 2001; Schwartz, 1994; Inglehart & Welzel, 2005). Mair and Marti (2006) state that social entrepreneurship has different facets and varies according to the socioeconomic and cultural environment. Granovetter (1985) argue that economic environments are embedded in the social and structural relationship. Therefore, Mair and Marti (2006) argue that both type of entrepreneurship should be examined in not only economic context, but also social context and the local environment.

Tapsell and Woods (2010) find that the tradition and heritage of an individual has an effect on their innovation path. Historical and cultural context are important factors to consider for the understanding of social and conventional entrepreneurship (Tapsell & Woods, 2010).

It is argued that depending on the level of economic development, entrepreneurs' values will change. As a result, this leads to more distinction between social and conventional entrepreneurs, since value differences is a major distinction between these two types of entrepreneurship already (See section 2.2.2). Inglehart (2000) states that higher level of economic and social development leads to higher levels of economic and physical security. This leads to a shift in the value of individuals that is not related to material needs, but more to immaterial needs such as emotion, personal identification and quality of life (Inglehart & Welzel, 2005). People in developing countries are driven by values of security, while people in developed countries are focused on self- expression and openness to change (Inglehart, 1997; Schwartz & Sagiv, 2000). Therefore, we argue that conventional entrepreneurs are more innovative in higher developed countries and social entrepreneurs are more innovative in less developed countries

This argument is reinforced by Seelos and Mair (2005), who argue that many initiative for social entrepreneur operate in developing countries that have no structures or resources to enable or support conventional entrepreneurship. Social entrepreneurs are the ones who are creating social value through creation of new business models, organizational structures and strategies to deal with limited and distinct resources.

### 4.3.1 Stages of Economic Development

The countries are categorized using the classification of the World Economic Forum's Global Competitiveness Report (Bosma & Levie, 2010). This is based on the level of GDP per capita and the extent to which countries are factor driven in terms of the shares of exports of primary goods in total

exports. Therefore, the countries are grouped into three stages of economic development, namely; factor driven, efficiency-driven and innovation-driven economies (Table 7).

Factor-driven economies are specialized in the production of agricultural products and small-scale manufacturing; efficiency-driven economies shifts from an agricultural towards a more manufacturing oriented economy, hereby the scale intensity of the economies are as a major driver of development; and innovation-driven economies are characterized by new and unique goods and services production that are created through sophisticated and often pioneering methods (Bosma & Levie, 2010). Each economy focuses on something different, this is why it is argued that there are difference in the innovative activities of the entrepreneurs. Factor-driven economies are focused on getting basic requirements to generate sustainable business, which can contribute to local economic activity, health and education of the next generation (Bosma & Levie, 2010). Efficiency-driven countries are focused on nurturing economies of scale to attract more entrepreneurs that are growth- and technology-oriented. The Goal in these countries is to create more employment opportunities. Innovation-driven countries focus on dynamics, stimulating new combination of products and markets (Bosma & Levie, 2010).

*Table 7: Countries Separated by Stages of Economic Development*

| Factor-driven Economies | Efficiency-driven Economies | Innovation-driven Economies |
| --- | --- | --- |
| Morocco | South Africa | United States |
| Uganda | Peru | Greece |
| Guatemala | Argentina | Netherlands |
| Venezuela | Brazil | Belgium |
| Tonga | Chile | Spain |
| Jamaica | Colombia | Italy |
| Lebanon | China | Switzerland |
| Syria | Iran | United Kingdom |
| | Latvia | Denmark |
| | Serbia | Norway |
| | Croatia | Germany |
| | Bosnia and Herzegovina | Japan |
| | Panama | Korea |
| | Ecuador | Iceland |
| | Uruguay | Finland |
| | Dominican Republic | Slovenia |
| | Jordan | United Arab Emirates |

Source: (Bosma & Levie, 2010)

In the dataset there are 2,914 entrepreneurs in factor-driven economies, from these entrepreneurs 23% of them are social entrepreneurs (Table 8). In efficiency-driven economies there are 6,119 entrepreneurs, which 29% are social entrepreneur, while in innovation driven economies there are 6,967 entrepreneurs of which 32% are social entrepreneurs.

*Table 8: Types of Entrepreneurs per Stages of Economic Development*

|  | Conventional Entrepreneurs |  | Social Entrepreneurs |  | Total |
|---|---|---|---|---|---|
| Factor-driven economies | 2,250 | 77.21% | 664 | 22.79% | 2,914 |
| Efficiency-driven economies | 4,330 | 70.76% | 1,789 | 29.24% | 6,119 |
| Innovation-driven economies | 4,744 | 68.09% | 2,223 | 31.91% | 6,967 |
| Total | 11,324 | 70.78% | 4,676 | 29.23% | 16,000 |

The logistic regressions for the explorative analysis are as follows. In Table 9, there are 9 models presented, Model 1 to 5 provide the estimate of the same logistic regressions that are in Table 6, but instead of including country dummies the categorical variable *development* is included. In Model 6 to 8 interaction terms between each stage of development and social entrepreneur is included. The interaction terms are the following; *factor*SE, efficiency*SE and innovation*SE*. The reason these interaction terms are included is to analyse the effect of different economic development levels on the relationship between social entrepreneur and the likelihood of being innovative. Finally, Model 9 includes the interaction terms for all the level of economic development in one model. The interaction term *factor*SE* is the reference category in Model 9. It should also be mentioned that the standard errors in Table 9 are clustered by the variable development. Thus, it is expected that there could be correlation between the standard errors within the different economies, but not between these three economies.

### 4.3.2 Explorative Results

After estimating the regressions, it can be observed that the variable *SE* is still significant at a 1% significance level (Table 9). The coefficients of SE have increased compared to the social entrepreneurship coefficients in Table 6, social entrepreneurs are 7% more likely than conventional entrepreneurs to be innovative in all the models, except for Model 8 and 9 in this model the social entrepreneurs are 9% more likely to be innovative compared to conventional entrepreneurs. Hereby, Hypothesis 1 is according to the explorative analysis still true, social entrepreneurs have a higher probability of being innovative compared to conventional entrepreneurs.

Which entrepreneurial type is more innovative?

In Table 9: Model 2 it can be seen that fear of failure does not have a significant effect on the probability of being innovative, this result differ from Table 6: Model 2. Looking at Table 9: Model 4, the results show that fear of failure remains insignificant, but the interaction term *fearfail*SE* is significant at a significance level of 1%. This means that social entrepreneurs who indicated they have no fear of failure are more likely to be innovative compared to others. Hereby, Hypothesis 2 is accepted. This differs from the main results in Table 6, this hypothesis is rejected from that results.

*Table 9: Average Marginal Effects on the Probability of being Innovative (development)*

| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 | Model 8 | Model 9 |
|---|---|---|---|---|---|---|---|---|---|
| SE | 0.07*** | 0.07*** | 0.07*** | 0.07*** | 0.07*** | 0.07*** | 0.07*** | 0.09*** | 0.09*** |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.00) | (0.01) |
| Fearfail(no) | | 0.01 | | 0.01 | | | | | |
| | | (0.02) | | (0.02) | | | | | |
| Opport(yes) | | | 0.07*** | | 0.06*** | | | | |
| | | | (0.02) | | (0.02) | | | | |
| Fearfail*SE | | | | 0.03*** | | | | | |
| | | | | (0.01) | | | | | |
| Opport*SE | | | | | 0.05*** | | | | |
| | | | | | (0.01) | | | | |
| Factor*SE | | | | | | 0.02 | | | (Ref. cat) |
| | | | | | | (0.01) | | | |
| Efficiency*SE | | | | | | | 0.03** | | 0.00 |
| | | | | | | | (0.01) | | (0.00) |
| Innovation*SE | | | | | | | | -0.03*** | -0.03*** |
| | | | | | | | | (0.00) | (0.01) |
| Male | -0.04*** | -0.04*** | -0.04*** | -0.04*** | -0.04*** | -0.04*** | -0.04*** | -0.04*** | -0.04*** |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Age | -0.01*** | -0.01*** | -0.01*** | -0.01*** | -0.01*** | -0.01*** | -0.01*** | -0.01*** | -0.01*** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (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) | (0.00) | (0.00) |
| No Education (ref.cat) | | | | | | | | | |
| Elementary | 0.09*** | 0.09*** | 0.09*** | 0.09*** | 0.09*** | 0.09*** | 0.09*** | 0.09*** | 0.09*** |
| | (0.03) | (0.03) | (0.03) | (0.03) | (0.03) | (0.03) | (0.03) | (0.03) | (0.03) |
| Secondary | 0.12** | 0.12** | 0.12** | 0.12** | 0.12** | 0.12** | 0.12** | 0.12** | 0.12** |
| | (0.05) | (0.05) | (0.05) | (0.05) | (0.05) | (0.05) | (0.05) | (0.05) | (0.05) |
| Post-secondary | 0.15*** | 0.15*** | 0.15*** | 0.15*** | 0.14*** | 0.15*** | 0.15*** | 0.15*** | 0.15*** |
| | (0.04) | (0.04) | (0.04) | (0.04) | (0.04) | (0.04) | (0.04) | (0.04) | (0.04) |
| Graduate | 0.18** | 0.17** | 0.17** | 0.17** | 0.17** | 0.18** | 0.18** | 0.17** | 0.18** |
| | (0.08) | (0.09) | (0.08) | (0.09) | (0.08) | (0.08) | (0.08) | (0.08) | (0.08) |
| Factor-driven economies (ref.cat) | | | | | | | | | |
| Efficiency-driven | 0.10*** | 0.10*** | 0.11*** | 0.10*** | 0.11*** | 0.10*** | 0.09*** | 0.10*** | 0.10*** |
| | (0.01) | (0.01) | (0.02) | (0.01) | (0.02) | (0.01) | (0.01) | (0.01) | (0.01) |
| Innovation-driven | -0.06** | -0.06** | -0.03 | -0.06** | -0.03 | -0.05** | -0.06** | -0.05** | -0.05** |
| | (0.02) | (0.02) | (0.03) | (0.02) | (0.03) | (0.02) | (0.02) | (0.02) | (0.02) |
| Pseudo R^2 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 |
| N | 16,000 | 16,000 | 16,000 | 16,000 | 16,000 | 16,000 | 16,000 | 16,000 | 16,000 |

Standard errors in parentheses. * *P*<0.1, ** P<0.05, *** *P*<0.01

Furthermore, Table 9: Model 3 shows that the ability to recognize opportunity of the entrepreneur does significantly affect the likelihood of being innovative. Table 9: Model 5 shows that both the variable *opport* and the interaction term *opport\* SE* is positively significant at a 1% significance level. This indicates that the ability to recognize opportunities of social entrepreneurs have a positive effect on the probability of being innovative. This means that social entrepreneurs who have indicated that they recognize opportunities are more likely to be innovative compared to others. Hereby, Hypothesis 3 can also be accepted. Again, compared to the main results the conclusion is different. Furthermore, SE in these models again remain the same. Possible reasons for this change in results for both hypotheses are discussed in the next chapter.

As was suspected, the variable *development* shows significant effect on the probability of being innovative (Table 9). The results show that entrepreneurs in efficiency-driven economies are more likely to be innovative than entrepreneurs in factor-driven economies. While entrepreneurs in innovation driven economies are less likely to be innovative compared to entrepreneurs in factor-driven economies. Although, it should be mentioned that in Model 3 and 5 this is not significant. The rest of the models show a significant effect at a 5% significance level. In conclusion the probability of being innovative is affected by the different level economic development of the countries the entrepreneurs are living in.

As was mentioned above, interaction terms for each level of development and the variable *SE* are included in the Model 6 to 9 of Table 9. Regarding these models, the results show that Social entrepreneurs in factor-driven economies do not have significant effect on the probability of being innovative (Table 9: Model 6).  Social entrepreneurs in efficiency-driven and innovation-driven economies, in contrast, are significantly related to the probability of being innovative. Social entrepreneurs in efficiency-driven economies are 3% more likely to be innovative compared to conventional entrepreneurs in efficiency-driven economies (Table 9: Model 7). This is at 5% significance level. Furthermore, it can be observed that social entrepreneurs in innovation-driven economies are 3% less likely to be innovative compared to conventional entrepreneurs in innovation-driven economies (Table 9: Model 8). This is significant at a significance level of 1%.

Finally, Model 9 includes all three interaction terms. The interaction term factor*SE is the reference category and is therefore left out of the equation. From Table 9: Model 9, It can be observed that social entrepreneurs in efficiency-driven economies have no significant effect on the probability of being innovative compared to those in factor-driven economies. Social entrepreneurs in innovation-driven economies are again 3% less likely to be innovative, but this is compared to those in factor-driven economies (Table 9: Model 9). This is significant at a 1% significance level.

### 4.3.3 Control Variables

As for the control variables, males are as in Table 6 still less likely to be innovative compared to females (Table 9). Also, the age variables remains the same, age has a negative significant relationship with the probability of being innovative, while age squared has a positive significant relationship with the probability to be innovative. Hereby, it can be concluded that younger and older entrepreneurs are more likely to be innovative compared to the middle-aged entrepreneurs. Regarding the educational attainment, the results show that as the educational level of the entrepreneurs increase, that their likelihood of being innovative also increase. Furthermore, it can be observed that the magnitudes of the coefficients have increased. The effects on the likelihood of being innovative are between 9% and 18%. The significance levels have improved for entrepreneurs with elementary and secondary education, these are in Table 9 at a significance level of respectively 1% and 5%. Although, for graduate experience the significance level has worsen from 1% to 5%.

### 4.3.3 Wald test

The Wald test is used to test the joint-significance of several coefficients. In this case, it is used to test the joint significance of the interaction terms between social entrepreneurs and each economic development level. Hereby, the F-test is used and it can be concluded that the hypothesis, that the coefficients are jointly significant, is accepted ($P$=0.00). The interaction terms factor*SE, efficiency*SE and innovation*SE have a jointly significant relationship with the probability of being innovative.

*Table 10: Summary of Results*

|  | **H1** | **H2** | **H3** |
|---|---|---|---|
| Main results | TRUE | X | X |
| Explorative results | TRUE | TRUE | TRUE |

*To summarize, it is concluded from the main results that Hypothesis 1 is accepted and hypotheses 2 and 3 are rejected (Table 10). The explorative results show that Hypotheses 1, 2 and 3 are accepted. Furthermore, it is concluded from the explorative analysis that social entrepreneurs in efficiency-driven economies are more likely to be innovative than conventional entrepreneur in the same level of economic development, but social entrepreneur in innovation-driven economies are less innovative than conventional entrepreneurs in the same level of economic development. In addition, after comparing the economic development with each other it is concluded that there are no significant difference found in the probability of being innovative between social entrepreneurs in factor-driven and efficiency-driven economies. Furthermore, social entrepreneurs in innovation-driven economies are less likely to be innovative compared to social entrepreneurs in factor-driven economies.*

# Chapter 5 Discussion and Conclusion

*In this chapter, the discussion and conclusion are presented. The findings are discussed and their relation to the literature. In addition, the limitations of this study are mentioned and suggestions for further research are given. Lastly, the research question is answered.*

## 5.1 Discussion

The aim of this research is to get a better understanding of the innovative behaviour of social entrepreneurs compared to conventional entrepreneur. The question that arises from the literature review is whether there is an empirical difference between the innovativeness of social and conventional entrepreneur or if it is an idealistic belief that social entrepreneurs are more innovative. Empirical research on social entrepreneurship is scarce and relatively little knowledge is known on this topic. Moreover, it can be observed that most of the existing studies are qualitative, quantitative researches on this topic are limited (Hoogendoorn, Pennings, & Thurik, 2010). Therefore, this research sets out to analyse both types of entrepreneurship and compare their probability of being innovative. After the estimation of fourteen logistic regressions, it can be concluded that as expected social entrepreneurs are more innovative than conventional entrepreneurs. This could be concluded from all the models. In addition, more insights on the perceptual variables fear of failure and ability to recognize opportunities have been gathered. From the main results, we find that these two factors do not have an effect on the probability of being innovative of social entrepreneurs. In the explorative analysis the results are different, both Fear of failure and the ability to recognize opportunities have an effect on the relationship between social entrepreneurs and the likelihood of being innovative, this is a positive impact. Thus, social entrepreneurs that have indicated to have ability to recognize opportunities and/or no fear of failure are more likely to be innovative than others.

Moreover, this study includes an explorative analysis, where the different level of economic development of the countries in our sample is taken into account. It is analysed if the level of economic development affects the relationship between social entrepreneurs and the likelihood of being innovative. As expected, the levels of economic development have an effect on the likelihood of being innovative. Social entrepreneurs in efficiency-driven economies are more likely than conventional entrepreneurs in efficiency-driven economies to be innovative. Although, this is not the case for social entrepreneurs in efficiency-driven economies compared to social entrepreneurs in factor-driven economies. Social entrepreneurs in factor-driven and efficiency-driven economies don't show significant difference. Social entrepreneurs in innovation-driven economies are less likely to be innovative than conventional entrepreneurs in innovation-driven economies. This is also the case if compared to social entrepreneurs in factor-driven economies, they are less likely to be innovative.

# Which entrepreneurial type is more innovative?

Why are social entrepreneurs in innovation-driven economies different than the social entrepreneurs in the other level of economic development? A reason may be the higher consumer needs that comes with the increase in wealth (Verheul et al., 2002). At this level of economic development there are more demands for differentiated (luxurious) products and for new goods and services. This gives the conventional entrepreneurs more opportunity to fill these market niches rather than the social entrepreneurs who are seeking to solve a problem or make social impact.

This study contributes to our understanding of social entrepreneurs in comparison to conventional entrepreneurs. Now there is some empirical evidence that social entrepreneurs are more likely to be innovative than conventional entrepreneurs. In addition, we got better understanding of how innovation relates to social and conventional entrepreneurs in different countries with different level of economic development. This has great implication for the social entrepreneurial discussions, as well as it is an addition to empirical knowledge on the topic of social entrepreneurship and innovation.

Regarding social contribution, the fact that social entrepreneurs are more innovative than conventional entrepreneurs has implication for policies and government support. Governments should look into the possibility of supporting social entrepreneurs. Since, they are more likely to be innovative and have as goal to work towards a more sustainable future and less destructive environment. Furthermore, policies should be modified to fit the economic development of the countries. There are also implications for larger firms, given that social entrepreneurs are more innovative they should start focussing more on social entrepreneurs. This can be done in the form of funding or consulting of innovative activities, since it can help larger firms gain competitive advantages over their competitors.

An empirical research is done to study the relationship between social entrepreneurship and innovation. From the existing literatures we got a broad, but mainly case-based and conceptualized, view on the relationship between social entrepreneurship and innovation. Some articles clearly argued that social entrepreneur have higher levels of innovativeness, but characterized social entrepreneurs as non-profit venture or a hybrid. We argue that social entrepreneurs are more likely to be innovative than conventional entrepreneurs. One of the arguments that is used is the difference between creating value versus capturing value. This distinguishes social entrepreneurs from conventional entrepreneurs (Santos, 2012). We also argue that the level of creativity and ability to think counterintuitive makes them more innovative. Though, this could not be explicitly deduced from our study, it indicates that there may be some truth to this assumption. Hereby, we suggest further research with variables that can test this, for example the level of creativity of the entrepreneurial activity. It can also be argued that the reason we see a significant results here, is because there is a

'self-fulfilling prophecy' happening. Light (2005) argue that the fact that social entrepreneurs are seen as a distinctive type of entrepreneurs may cause these individuals to behave differently and separate themselves from conventional entrepreneurs. This should be researched further by including a more objective measure of innovativeness, such as performance or failure rate.

Furthermore, two factors are researched that may influence the relationship between innovation and social entrepreneurship. The first factor is a proxy for risk tolerance, fear of failure. This variable does not to have an effect on the relationship between innovation and social entrepreneurship from our main results, but in the explorative analysis it does have a significant effect. Thus, the effect of risk tolerance on the relationship between social entrepreneur and the probability of being innovative remains unclear. There is also the possibility that fear of failure is not the best measurement for risk tolerance (Koellinger, 2008).

The second factor that is researched is the ability to recognize opportunities. From the main results we find that this had an effect on likelihood of innovation, but cannot observe a significant effect on the relationship between social entrepreneur and innovation. The explorative analysis shows a different result, we find evidence that opportunity recognition has an effect on the relationship between social entrepreneur and innovation. Social entrepreneurs who perceived themselves to have the ability to recognize opportunities showed more likelihood of being innovative compared to others. The explorative result is in line with the literatures in Chapter 2 section 2.3.2. Further research on both factors is needed.

Hypothesis 1 is that social entrepreneurship is more innovative than conventional entrepreneurs. The results in Chapter 4 have led us to conclude that Hypothesis 1 can be accepted, as in both the main and explorative analysis we found evidence that support this assumption. Hypothesis 2 is that fear of failure affect the relationship between social entrepreneurship and the likelihood of being innovative. The conclusion to this hypothesis can be debated, since this was significant in the explorative result, however in the main results this was not significant. Finally, Hypothesis 3 is that the ability to recognize opportunities influence the relationship between social entrepreneur and the likelihood of being innovative. This hypothesis can be rejected from the main analysis, but in the explorative analysis there is evidence of the contrary. Due to the contradictory results we suggest further research on these two factors.

Regarding our explorative analysis we found some interesting information. There is evidence that each level of economic development shows different relationship between social entrepreneurship and innovation. In contradiction to previous results found in our main analysis, not every social entrepreneur is more innovative than conventional entrepreneur. Social entrepreneurs in Innovation-

driven economies are less likely to be innovative compared to conventional entrepreneurs in innovation-driven economies. This also counts for social entrepreneur in innovation-driven economies compared to social entrepreneurs in factor-driven economies. This can be due to the fact that corporate venture are mostly concentrated in developed countries with corporate social responsibility projects (Seelos & Mair, 2005). While in developing countries, corporations are working through collaboration with local forms of social entrepreneurship. The reason behind this could be either to contribute to sustainable development or because they have an interest in developing a future market for their own products or services (Seelos & Mair, 2005). Another reason can be that conventional entrepreneurs in innovation-driven economies are more opportunity-seeking, since they are more focused on gaining an innovation productivity advantage over established firms (Bosma & Levie, 2010). This enables them to operate as 'agents of creative destruction'. Furthermore, institutional factors can also play a role in the differences between the levels of economic development (Acs, Desai, & Hessels, 2008). This requires further research. For efficiency-driven economies we only found evidence of significant different between conventional and social entrepreneur in this economy level. Although, compared to social entrepreneurs in factor-driven economies we could not observe a significant difference. Additionally, social entrepreneurs and conventional entrepreneurs in factor-driven economies do not have significant difference in their likelihood to be innovative. Lastly, we tested if there is a joint significant relationship between the coefficient of the three different economies and social entrepreneurship. The results showed that they are jointly significant. The explorative analysis has indicated that our previous conclusion that social entrepreneurs are more likely to be innovative than conventional entrepreneurs, is not valid in every situation. Although this research gives a good start, it is clear that more information is needed on the relationship between innovation and social entrepreneurship.

As for the control variables, females are found to be more likely to be innovative than males. This reinforces the argument of Stelter (2002) that females tend to have more of a transformational leadership style compared to males. Therefore, suggesting that females will positively affect innovation. From the findings we also conclude that younger and older entrepreneurs are more likely to be innovative than middle-aged entrepreneurs. Younger entrepreneurs are more innovative, since they are more willing to adopt new ideas and behaviours and are also more willing to take risks (Hambrick & Mason, 1984). Furthermore, they have been trained recently and thus have current technological training (Bantel & Jackson, 1989). Older entrepreneurs are more innovative, this can be due to their extensive experience and time they have to put into the entrepreneurial activities. With regards to educational attainment, our findings reinforce that highly educated individuals are more innovative (Lee, Wong, & Chong, 2005; Kimberly & Evanisko, 1981). From this study it could be

concluded that as the educational attainment of the entrepreneur increases, the probability of being innovative also increases.

## 5.2 Limitation and further research

Some limitations of this study can also be mentioned. Firstly, there are some drawbacks to the selected sampling approach. Although, there are advantages using a subjective sample may lead to perceptual biases, because of for example answers that might vary depending on the conditions the individual is in (Veenhoven, 2002). Furthermore there can be problems with comparison, since different people use different criteria in order to make a decision. Additionally, there are people from different culture and their answers can differ greatly (Veenhoven, 2002). Also responses may be distorted in a systematic way, because of the tendency of respondents to conform to social desirability. Advantages to such a measurement are that subjective judgements of individuals can certainly influence their behaviour (Koellinger, 2008). In the case of the measurements for innovativeness, it makes it possible to analyse how the probability of social entrepreneurs to innovate is affected by perceptions of risk, business opportunities and other factors. An objective measurement for innovativeness might be useful, although it will also have to take perception of individuals into account or some performance criteria, such as survival rate (Koellinger, 2008). This should be considered in future research.

Secondly, despite the fact that GDP per capita has been proven to be a useful indicator for economic development, it is still debated in the academic world. The reason is that GDP per capita does not fully measure the level of development or welfare (Islam & Clarke, 2002). This is due to the fact that the purchasing power of the individuals in these countries is not taken into account.

Finally, even though the variable fear of failure and ability to recognize opportunities are added as factors that can influence the relationship between social entrepreneurship and innovation, there are many more additional factors that could be of influence on the probability of being innovative that are not included in our study. An example is transaction cost, these cost are important for the assessments of entrepreneurial activities and may influence the likelihood of being innovative (Picot, Laub, & Schneider, 1990). The cost of government regulation can also influence the innovative level of entrepreneurs, since it influences the relative rewards of the business activities (Atkinson & Stiglitz, 1980; Pizer, 2002; Darnihamedani, Block, Hessels, & Simonyan, 2015). Also, it is argued that individuals who have experience in the industry, market knowledge and education are more innovative than those who rely only on education in science. Thus, a variable that measure industry-specific knowledge should be included in the future. Parker (2009) argues that industry-specific factors may have influence on the likelihood of being innovative.

These are not possible to include in this study, because of the limitation of our dataset. Though, it should be mentioned that it is impossible to add all potentially relevant variables in this study. As long as the missing variables are independent from the covariates included in the regression this is also not necessary (Wooldridge, 2010). A more conclusive test for our hypotheses could have been done to control for such unobservable heterogeneity. This can be done with for example a fixed effect estimation in a panel data or experimental methods (Koellinger, 2008). This should be done in future research, when there is for example more year of GEM data with the special issue on social entrepreneurship.

As mentioned above, policy makers should stimulate more individuals to become social entrepreneurs. What shape of form the policies should take, have to still be analysed further. A suggestion for further research is looking at different ways that policy makers can effectively stimulate social entrepreneurship. This can be for example education, funding or building incubators escpecially for social entrepreneurs.

## 5.4 Conclusion

We are now able to answer the research question: What is the effect of being a social entrepreneur on the probability of being innovative? The study shows that the effect of being a social entrepreneur is positive on the probability of being innovative. It can also be concluded that social entrepreneurs in different level of economies differ in their likelihood of being innovative. This gives us a lot more information than we had beforehand. Empirically, it validates the case-based and conceptualized research that are presented in Chapter 2. Practically, it indicates that our practitioners, government and academics are moving in the right direction and should keep increasing the focus on social entrepreneurship. Further research is needed on the factors that may influence the relationship between social entrepreneurship and innovation. This will improve the understanding on this topic even further.

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# Appendix A: Descriptive Statistics for Conventional and Social Entrepreneur

| Variable | Mean | SD | Min | Max |
|---|---|---|---|---|
| **Conventional entrepreneur** | | | | |
| Opport(yes) | 0.47 | 0.50 | 0 | 1 |
| Fearfail(no) | 0.73 | 0.44 | 0 | 1 |
| Age | 41.65 | 12.38 | 16 | 91 |
| Male | 0.64 | 0.48 | 0 | 1 |
| Edu | 1.88 | 1.11 | 0 | 4 |
| *Observations* | *11,324* | | | |
| **Social Entrepreneur** | | | | |
| Opport(yes) | 0.46 | 0.50 | 0 | 1 |
| Fearfail(no) | 0.74 | 0.44 | 0 | 1 |
| Age | 41.53 | 12.45 | 18 | 86 |
| Male | 0.61 | 0.49 | 0 | 1 |
| Edu | 2.03 | 1.03 | 0 | 4 |
| *Observations* | *4,676* | | | |

Note: N=16,000. SD is standard deviation.

# Appendix B: Average Marginal Effects on the Probability of being Innovative (*country*)

|  | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
|---|---|---|---|---|---|
| United States (ref.cat) |  |  |  |  |  |
| South Africa | 0.13*** | 0.13*** | 0.12*** | 0.13*** | 0.12*** |
|  | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Greece | 0.00 | 0.01 | 0.01* | 0.01 | 0.01* |
|  | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Netherlands | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 |
|  | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Belgium | 0.04*** | 0.04*** | 0.05*** | 0.04*** | 0.05*** |
|  | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Spain | -0.06*** | -0.06*** | -0.05*** | -0.06*** | -0.05*** |
|  | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Italy | -0.11*** | -0.10*** | -0.10*** | -0.10*** | -0.10*** |
|  | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Switzerland | -0.09*** | -0.09*** | -0.09*** | -0.09*** | -0.09*** |
|  | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| United Kingdom | 0.01** | 0.01* | 0.01** | 0.01* | 0.01** |
|  | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Denmark | -0.04*** | -0.04*** | -0.04*** | -0.04*** | -0.04*** |
|  | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Norway | 0.03*** | 0.03*** | 0.02*** | 0.03*** | 0.02*** |
|  | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Germany | -0.05*** | -0.05*** | -0.05*** | -0.05*** | -0.05*** |
|  | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Peru | 0.31*** | 0.31*** | 0.30*** | 0.31*** | 0.30*** |
|  | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Argentina | 0.21*** | 0.21*** | 0.20*** | 0.21*** | 0.20*** |
|  | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Brazil | 0.02 | 0.02 | 0.01 | 0.02 | 0.01 |
|  | (0.02) | (0.02) | (0.02) | (0.02) | (0.02) |
| Chile | 0.37*** | 0.37*** | 0.37*** | 0.37*** | 0.37*** |
|  | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Colombia | 0.01 | 0.01 | 0.00 | 0.01 | 0.00 |
|  | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Japan | -0.05*** | -0.04*** | -0.03*** | -0.04*** | -0.03*** |
|  | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Korea | 0.02*** | 0.02*** | 0.04*** | 0.02*** | 0.04*** |
|  | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| China | 0.23*** | 0.23*** | 0.23*** | 0.23*** | 0.23*** |
|  | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Iran | 0.10*** | 0.10*** | 0.10*** | 0.10*** | 0.10*** |
|  | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Morocco | -0.16*** | -0.17*** | -0.17*** | -0.17*** | -0.17*** |
|  | (0.02) | (0.02) | (0.02) | (0.02) | (0.02) |
| Uganda | -0.17*** | -0.17*** | -0.19*** | -0.17*** | -0.19*** |
|  | (0.02) | (0.03) | (0.02) | (0.03) | (0.02) |
| Iceland | -0.01** | -0.01** | -0.02*** | -0.01** | -0.02*** |
|  | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Finland | -0.05*** | -0.06*** | -0.06*** | -0.06*** | -0.05*** |
|  | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |

| | | | | | |
|---|---|---|---|---|---|
| Latvia | -0.05*** | -0.05*** | -0.04*** | -0.05*** | -0.04*** |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Serbia | -0.02* | -0.02* | -0.00 | -0.02* | -0.00 |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Croatia | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Slovenia | -0.01* | -0.02** | -0.02** | -0.02** | -0.02** |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Bosnia and Herzegovina | 0.11*** | 0.11*** | 0.10*** | 0.11*** | 0.10*** |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Guatemala | 0.29*** | 0.29*** | 0.28*** | 0.29*** | 0.28*** |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Panama | -0.04*** | -0.04*** | -0.06*** | -0.04*** | -0.06*** |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Venezuela | -0.00 | -0.00 | -0.02* | -0.00 | -0.02* |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Ecuador | -0.10*** | -0.10*** | -0.11*** | -0.10*** | -0.11*** |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Uruguay | 0.14*** | 0.15*** | 0.14*** | 0.15*** | 0.14*** |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Tonga | 0.34*** | 0.34*** | 0.33*** | 0.34*** | 0.33*** |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Dominican Republic | 0.03** | 0.03** | 0.02* | 0.03** | 0.02* |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Jamaica | 0.02* | 0.02 | 0.01 | 0.02* | 0.01 |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Lebanon | 0.02* | 0.01 | 0.00 | 0.01 | 0.00 |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Jordan | 0.07*** | 0.07*** | 0.07*** | 0.07*** | 0.07*** |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Syria | 0.09*** | 0.09*** | 0.08*** | 0.09*** | 0.08*** |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| United Arab Emirates | 0.13*** | 0.13*** | 0.13*** | 0.13*** | 0.13*** |
| *N* | 16,000 | 16,000 | 16,000 | 16,000 | 16,000 |

Standard errors in parentheses. * *P*<0.1, ** P<0.05, *** *P*<0.01