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A Cross-Country Study of Social Entrepreneurship: Comparing risk taking and risk perception attitudes.

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Abstract

This paper examines the existence and factors which influence the cross country differences between social entrepreneurs' willingness to take risks. Data from 36 countries, from the Flash Eurobarometer Data 2010 is used. Hypotheses are formulates in order to test for differences both, on an individual and a macroeconomic level. The findings indicate the existence of great country differences and to indicate some of the reasons behind these differences. Therefore, this thesis is able to contribute to the upcoming research field of social entrepreneurship,

Introduction

Over the past few years the importance of entrepreneurs for society has been growing. Audretsch and Thurik (2001a, 2001b) show that there been a change in society, from a Managed to an Entrepreneurial economy.(Audretsch & Thurik 2000,2001a,2004,2010) This change, mostly triggered by the advance of Information and Communication Technologies, (ICT) has enabled smaller companies to challenge the big corporation which has dominated the economic scenario for more than 40 years. With this change in society, more and more entrepreneurs have had the opportunity, and the number of small and medium enterprises (SME) increased dramatically by the end of the 20th century. Together with this trend another subject has been receiving increased attention from the academic world. Social entrepreneurship, as individuals or organizations engaged in entrepreneurial activities with a social goal (Bosma & Levie, 2010), has been understood a new trend within the entrepreneurial trend (Dees 1998).

While the definition of social entrepreneurship is not a complete agreement, some say that social ventures need to be not for profit, other argue that profit is not an issue. There are some basic concepts that distinguish the social entrepreneur from the non-social one. (Hoogendoorn et al. 2010, Dees 1998) Most agree that social entrepreneurs start business with the intent to meet a social or environmental need. And with the number of social enterprises growing, the interest in such a subject has followed the same path and grew on the same extent.

Trying to understand the individuals within this new trend has been the subject of some recent studies (Leadbeater, 1997, Hoogendoorn et al. 2010). Most of these studies, however, focused only on a micro level analysis and macro level analyses are scares. This thesis tries to achieve both level analyses.

The main focus of this thesis is the related to risk, entrepreneurs are known for being able to bare more risks than non-entrepreneurs (Moskowitz and Vissing-Jørgensen, 2002), and many studies confirm such claim (Parker 2009) entrepreneur then are extremely important to society due to their ability to take more risks than their non-entrepreneurial counterpart.

However, studies on social entrepreneurs on the same subject are scarce (Leadbeater, 1997). The existing studies indicate a similar propensity towards risk for social entrepreneurs to the

one presented by non-social entrepreneurs, with some differences regarding the type of risk (Leadbeater, 1997, Shaw and Carter 2007). However, no study so far has tried to identify possible cross country differences between social entrepreneurs' willingness to take risk, nor their causes. Therefore, in order to contribute to this new academic field, the following research question is formulated and answered.

Are there cross-country differences of social entrepreneurs' risk perception, and if so, what drives these differences?

In order to answer such question, resources from the European commission are used. The data used for this thesis originates from a survey sponsored by the European Commission, namely: Flash Eurobarometer Data 2010. It examines mostly, the motivation, choices, experiences and obstacles linked to self-employment. (European Commission 2010) It covers 36 countries, including all 27 EU member states, the EEA/EFTA countries (Norway, Switzerland and Iceland), Turkey and Croatia, the US and three Asian countries (China, Japan and South Korea). (European commission 2010) With over 26,000 concluded interviews, it consists of an extremely efficient way of comparing Social entrepreneurship cross country.

With this data in hand models are formulated so that both micro and macro analyses are made. In a first moment, a Logit model is used to check for the existence of cross country differences related to willingness to take risks, individual demographic specifics such as sex, age, wealth, self-confidence and optimism are also tested. After the realisation that such differences do occur, a new model is used to try to identify the factors which generate such differences. Therefore macroeconomic variables such as GDP per capita, Inflation and easiness to do business are used and tested.

The results obtained indicate strong cross-country differences in social entrepreneurs' willingness to take risk. With the USA being used as a reference, it was possible to see how much individuals are affected by the simple fact of being born in a specific country. Most socio demographic characteristics have proven to have significance, the dataset indicates that male, and younger individuals are more willing to take risks, and that individuals who are more confident and optimistic about the future are as well.

However, while the existence of country differences was found, the reasons behind such differences are not that clear. Only in a portion of the social entrepreneurs do some of the

variables used presented significant effects. In this group however, it is possible to see why some of the country differences occur. Country wealth and the number of mobiles per capita seem to be positively related to willingness to take risks, while easiness to do business seems to have the opposite relationship.

This thesis therefore fits well in the upcoming world of social entrepreneurial studies and contributes to its' constant pursue of understanding the entrepreneurial mind by confirming some studies and presenting a new view on social entrepreneurs in today's world.

This this is structures in 6 main sections: Literature review, Hypotheses formulation, Data, Method, Results and Conclusion.

In the first one, a brief review on the studies contemplating subjects related to this thesis is made, with a main focus on social entrepreneurship and risk. In the second section a series of hypotheses which are to be tested in order to answer the research question are formulated.

The Data section makes a brief description of the dataset used for testing such hypotheses. While in the Method part, the methods and variables used to accomplish such task are described. Finally, in the Result section, all results from regressions are presented and interpreted, and a discussion on what these results mean for this thesis is made in the Conclusion.

Literature Review

In the following section, the most important concepts of this thesis will be reviewed. This review will focus on 3 main concepts: entrepreneurship, social entrepreneurship, risk, these subject interactions and finally country differences

Entrepreneurship

The concept of entrepreneurship is not new, authors like Schumpeter and Knight in the first half of the 20th century already discussed the importance of entrepreneurs in the economy. However, while the word "entrepreneur" is used vastly, the concept of what entrepreneurship is exactly is not precise, nor a consensus.

The term is charged with subjective measures, and therefore, different lines of studies, such as psychology, sociology, finance and economics, developed different approaches to define what entrepreneurship is.

Economists view entrepreneurs as "agents of change", and are normally associated with the creation and management of small enterprises. This relationship between small enterprises ad change can be best understood by Schumpeter's "*creative destruction*" where, small firms or individuals pursue monopolistic power through innovation, and then creating new technologies and methods that lead to a complete change in the market structure (Schumpeter 1942). Therefore, another characteristic associated with these agents of change is innovation.

In recent days, entrepreneurs are also seen as prerequisites for country growth. (Audretsch and Thurik 2001b) But it was not always like this, for decades, entrepreneurial activity was shadowed by the big corporations, the reasons behind this have been well described by Audretsch and Thurik in a series of articles. (2001a, 2004)

The scenario where small companies have a disadvantage can be called the Managed Economy (Audretsch and Thurik 2001a, 2004, Thurik 2008). The era of the managed economy was characterized by mass production, economies of scale and oligopolies. This was the outlook for the world's economy for over 40 years, until the end of the 1980's. This model of economy proved to be extremely successful with large companies leading the way as well as with companies applying concepts such as Fordism, Taylorism and Keynesianism

(Thurik 2008). As a result, the economy was based on stability, continuity and homogeneity, all concepts that favour the large enterprise with scale gains (Audretsch and Thurik 2001a).

Entrepreneurship or smallness therefore was seen as less efficient, presenting lower wages and less innovative than their large counterparts (Audretsch and Thurik 2004). They were therefore, seen as luxury for most countries. While considered inefficient, small firms also contribute to a better distribution of power. However, all this would change, mostly due to technological change and globalisation

Schumpeter (1942) explained the creative destruction as mention before, and the creation on Information and Communication Technologies (ICT) can be seen as one of these events. It would then, completely change the rules of the game (Audretsch and Thurik 2010). The so called ICT revolution, and most importantly the internet revolution, was able to reduce some of the advantages of large over small firms. With the advent of ICT, small firms benefited from low entry barriers and more flexibility. The large economies of scale became less important, since most production could now be shifted to countries with lower wages. Larger companies as well, started to shift their production to countries with lower wages, mostly Asian countries, later to be called the Asian tigers. This shift of production locations generated great job losses in the most industrialized countries, such as the US and western European countries (Audretsch and Thurik 2010).

The ICT revolution reduced communication costs drastically, narrowing the existing cost gap between large and small firms significantly. With this advantage, small firms were finally able to challenge the big enterprises. Allied to that is the fact, as showed by Klepper (1996), that whenever a technological breakthrough happens, small firms have increased importance. However, Klepper's model shows that the number of firms after some time lowers again, since firms start having some expertise and invest more in R&D. Some more entry barriers are created and only the most efficient firms survive (Klepper 1996).

Nevertheless, the ICT revolution also changed the essence of products. A new kind of economy arises, the Entrepreneurial Economy that, unlike the Managed Economy, is more knowledge based and dynamic. It is no more based on continuity, but instead, in novelty, innovation, creativity and flexibility (Thurik 2010).

The dawn of the Entrepreneurial Economy shook the academic world, with new theories to explain and understand this new trend (Busenits et al. 2003). This increase in articles related

to entrepreneurship first and foremost faced the challenge of defining "what is the entrepreneur". Over the years many different concepts have arisen. In 1989 Hébert and Link (1989) tried to compile what has been written about entrepreneurship, and come up with one definition that was the sum of all previous definitions: "*the entrepreneur is someone who specializes in taking responsibility for and making judgmental decisions that affect the location, form, and the use of goods, resources, or institutions*" (Hébert & Link 1989, pp. 47). This highlights some of the characteristics of entrepreneurs, but still did not manage to cope with all the different dimensions of entrepreneurship, so Wennekers and Thurik (1999), following Hébert and Links' article suggest that entrepreneurship should be defined as : "*Entrepreneurship is the manifest ability and willingness of individuals, on their own, in teams, within and outside existing organizations, to:*

– Perceive and create new economic opportunities (new products, new production methods, new organizational schemes and new product-market combinations) and to
– Introduce their ideas in the market, in the face of uncertainty and other obstacles, by making decisions on location, form and the use of resources and institutions" (Wennekers & Thurik,1999,pp. 20).

Many other definitions appeared, each highlighting some of the possible aspects comprised in the term "entrepreneurship". The lack of a proper definition, however, creates a major problem for researchers. If it is not properly defined, it is not properly measured and therefore, all authors rely on simpler definitions. Most commonly the definition of the entrepreneur being a self-employer is used. This definition, may seem too simple, and be accompanied by several measurement problems but it is an effective and direct way of identifying entrepreneurs. This study will identify entrepreneurs as individuals who are or were self-employed.

Definitions change, but the matter at study is the same the results over the importance of entrepreneurship in modern economy show that entrepreneurs are very important in today's economy.

Social entrepreneurship

Social entrepreneurship is an extension of entrepreneurship, if entrepreneurs are agents of change, social entrepreneurs are agents of change in the social sector, agents moved by a social mission (Dees 1998). However, as with entrepreneurship, there is no exact, universal definition for the term social entrepreneurship, this happens due to the novelty of the subject,

and hence most of the articles released related to the subject try to define what social entrepreneurship is and what is it not.

At first, some scholars understood social enterprises as non-profit organizations or organizations which did not use government funding (Boschee & McClurg, 2003, Fowler, 2000).Others focus more on the social change provided by these enterprises (Mair & Martí, 2006, Nicholls, 2006). While the term is new, (it was first quoted by Banks in 1972), the concept is not. Some authors highlight that there have been several social entrepreneurs over history, such as Robert Owen (1771-1858), Florence Nightingale (1820-1910), Henry Durant (1829-1910), William Booth (1829-1912), Frederick Law Olmstead (1822-1903) (BrightHub.com 2010). With this in mind, over the past 20 years, there has been a great increase in articles, as mentioned before.

Eventually, four major schools of thought are created related to social entrepreneurship: (Hoogendoorn *et al*. 2010)

- The Innovation School of thought: According Hoogendoorn, Pennings and Thurik (2010) this school "*focuses on the social entrepreneurs as individuals who tackle social problems and meet social needs in an innovative manner*" (Hoogendoorn *et al*. 2010, pp.7). Bill Drayton is the reference, founder of Ashoka, one of the most influential associations focused on giving opportunities to social entrepreneurs. Ashoka focuses is improving what they call the "civil sector", since citizens "*are the essence of the sector. We believe that when one or several people get together to cause positive social change, they instantly become citizens in the fullest sense of the word.*"[1] (Ashoka.org , 2011)

- The Social Enterprise School of thought: This focuses on enterprises which do not use government funding and are still able to generate social utility, these enterprises are mainly non paid, although are entitled to receive earnings to maintain their continuity. Edward Skloot is one of the pioneers of this school, creating a firm which provides consultancy for non profit ventures.

- The EMES approach: The Emergence of Social Enterprise in Europe (EMES) also focuses on enterprises, but unlike the previous School, it allows some profit to be distributed. Hoogendoorn, Pennings and Thurik (2010) explains the EMES view on enterprises as "*the social enterprise has an explicit aim to benefit the community, is launched by a group of citizens, enjoys a high degree of autonomy, is participatory in*

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[1] http://www.ashoka.org/citizensector

nature, and does not base decision-making power on capital ownership."
(Hoogendoorn *et al*. 2010, pp.8)

- The UK Approach: Created by the Blair government in the United Kingdom, this approach perceives enterprises as means to establish links between the civil society and public and private sectors. It defines social enterprises as "*businesses with primarily social objectives whose surpluses are principally reinvested for that purpose in the business or the community, rather than being driven by the need to maximize profits for shareholders and owners*"[2] (Hoogendoorn *et al*. 2010, pp.9)

According to Hoogendoorn, Pennings and Thurik (2010) these approaches do not have strict boundaries between them, and therefore, many articles can be classified in more than one of these schools. This also shows how loose definitions around social entrepreneurship are. However, it is important to notice that almost all of them mention that social enterprises exist to solve, or tackle a social issue and in most cases are created by individuals, not governments. Therefore, these can be seen as social entrepreneurs' key characteristics.

With this in mind, this thesis will therefore use some of the definitions provided by previous scholars. The focus of this thesis is to find differences of risk preferences based on individual responses. Therefore, with the definition of the entrepreneur as someone who is or was self-employed, the definition of social entrepreneurs is linked to the nature of these enterprises. Using the key characteristics, if these enterprises have been developed at any rate to try to solve a social problem this individual shall be considered a social entrepreneur.

Therefore, in a simple sentence, for this thesis, a social entrepreneur is:

An individual who starts a venture with the intent to address a social or environmental need

Risk Taking

As mentioned before, some of the definitions of entrepreneurs are directly related to risk, as entrepreneurs are more likely to take some risks than others. However, in order to understand such statement, it is important to understand what economists mean when they say risk, and willingness to take risk.

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[2] http://www.socialenterprise.org.uk/pages/about-social-enterprise.html

Risk

The concepts of risk and entrepreneurship have always walked side by side. Cantillon (1755) is the first to write of entrepreneurs as uncertainty-bearers. In his concept however, entrepreneurs are not innovators, they are a class involved in pure arbitrage. Cantillon's entrepreneurs make investments hoping for future returns. They serve as adjusters of society, they do not change demand or supply, and instead they improve the allocation of factors (Coutinho 2005). However, Cantillon's ideas on entrepreneurs were mostly ignored by scholars until early in the 20th century, when it was rediscovered by Keynes and Knight (Catalán 2010).

Cantillon's contribution to the concept of the entrepreneur is extremely important for this thesis since understanding that entrepreneurs are to some extent risk takers is one of the motivations for this study.

Following on Cantillon's steps, Knight, one of the founders of the *Chicago School*, in 1921 defines differences between risk and uncertainty. Knight's work, when seen with modern days perceptive, may seem antiquate. However, as Cantillon, Knight's work should not be criticized with modern eyes, but instead understood as a starting point of modern economy. Therefore, the concepts of Risk and Uncertainty described by Knight are essential.

First and foremost, it is important to realize that Knight (1921) accepts the idea of an economy where not everything is known, which differ him from classical authors such as Smith and Say. Accepting this fact, Knight tries to explain that there is a difference between known and unknown future facts. Risk is associated to future event which results can be measured by probabilistic statistics, Knight also highlight three different types of probabilities, the "*a priori* statistics", "probabilistic statistics" and "estimates".

- *A priori* statistics: this sort of statistics is related to a probability distribution based on common sense, instead of on experimentation. According to Knight, *a priori* statistics "*is on the same logical plane as the propositions of mathematics*" (Knight, 1921, pp.99). The example used is the one of a dice, the odds of a specific number to appear is understood to be 1/6, without any experimental confirmation of such statement. His example is that one will not change its' belief that the probability of getting a 6 when throwing a die is 1/6 even if the die is thrown a number of times and the 6 is not achieved. (Knight 1921)

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- Probabilistic statistics: This sort of statistics is related to actual chance and, more precise distribution of probabilities, or "*empirical evaluation of the frequency of association between predicates*" (Knight, 1921, pp.99). This however, as Knight states, is not the same as the first, since there is no belief in probability until there is proof of it.

- Estimates: Knight says there are some cases, when people rely on "*upon "judgment" or "intuition" not reasoning, for the most part*" in these moments, "*there is no valid basis of any kind for classifying instances.*" However, individuals still make predictions, and according to Knight, this kind of probability is the most relevant for business students. (Knight 1921,pp.98-99)

These concepts are relevant in order to better understand the differences between risk perceptions, since, in the business world, almost all of probabilities are based on estimates more than on probabilistic statistics, mostly due to lack of perfect information.

Uncertainty, however, cannot be properly measured. According to Knight, it arises from the existence of partial knowledge "The essence of *the situation is action according to* **opinion,** *of greater or less foundation and value, neither entire ignorance nor complete and perfect information, but partial knowledge*" (Knight ,1921,pp. 87). However, this does not imply a necessity of full knowledge to have risk rather than uncertainty, it simply means that in some circumstances, it is not possible to make any predictions whatsoever.

Entrepreneurs, in general, are faced with uncertainty, since venturing into opening a new business normally implies a series of partial knowledge and assumptions based on individual "feeling"

Therefore, if there are differences between the perceptions of future outcomes, there is also the notion that different people will have different concepts of risk.

Entrepreneurs and Risk

As mentioned before, since Cantillon in 1755, the concept of entrepreneurs and risk walk hand in hand. (Cantillon 1755, Knight 1921, Parker 2009).

As mentioned before, for this thesis, entrepreneurs are considered self-employed individuals who have made a choice of giving up a regular wage jobs with probable job benefits, safety for the uncertainty of opening their own business and facing uncertainty regarding future

income. It is obvious that this choice is made taking in consideration the risks associated with it. The reason why entrepreneurs are willing to make this risky choice and non-entrepreneurs are not has been the subject of many studies (Parker 2009, Schumpeter 1934).

Many specific entrepreneurial characteristics have been tested for influencing the individual choice process so far, such as age, sex, marital status, family entrepreneurial history. While some have proven to present some importance, the ultimate reason is yet to be found, if it exists at all.

Therefore, the reasons why entrepreneurs become entrepreneurs are still to be answered, but the fact that entrepreneurs are willing to take more risks is widely accepted. In this it is important to understand that entrepreneurs are risk takers, and not gamblers, "*entrepreneurs' behaviour is better described by moderate and calculated risk taking than outright gambling*". (Parker, 2009, pp. 37)

However, while entrepreneurs' risk perception has been a source of many studies, social entrepreneurs' is yet to be better comprehended

Social entrepreneurs and Risk

It is to be expected that as "regular" entrepreneurs, social entrepreneurs face risks. (Hoogendoorn, van der Zwan & Thurik 2011) And literature suggest that is the case, and some authors even use risk taking as part of the definition for social entrepreneurs (Zahra 2009, Dees 1998). The risks faced by social entrepreneurs seem to be different than the ones faced by "non-social" entrepreneurs. Social entrepreneurs are, for example, more concerned over their reputation, in order to maintain a constant inflow of resources necessary for a social enterprise (Leadbeater, 1997), while non-social are faced more with personal economical risks since non-social entrepreneur tend to earn their livings on the base of their enterprises(Shaw and Carter 2007). Therefore there is a perception that social entrepreneurs are more affected by non-financial risks, while entrepreneurs face financial risks (Hoogendoorn, van der Zwan & Thurik 2011). However, these relationships have not yet been explained thoroughly.

Country differences

Social entrepreneurship is not something exclusive to just a few countries, Zahra *et al* (2008) tries to understand the reasons behind the globalization of social entrepreneurship. They

come to the conclusion that different factors attract social enterprises to different countries. This means that the concept of social entrepreneurship is widespread in today's world. However, there are many differences between countries.

Many studies do try to identify and analyse these differences, (Uhlaner & Thurik 2007, Hofstede 1980, 1984) and usually highlight how a specific factor which has a relationship with entrepreneurs. Studies analysing and trying to measure the effect of culture are also vast. Hofstede (1980, 1984) however, deserves a special spot on this subject, he defines 5 different cultural dimensions, which are essential to understand the differences in business making across different countries and are used in many other articles. These 5 dimensions consist of: Power Distance Index (PDI), Individualism (IDV), Masculinity (MAS), Uncertainty Avoidance index (UAI) and Long Term Orientation (LTO).

Each of these dimensions shows a specific characteristic from the country. While PDI measures the inequality of power, IDV measures the importance of community structures, such as the family. MAS, measures the differences between man and woman and LTO shows how some countries are more prudent and perseverant or possess more respect for tradition. (Hofstede 1980, 1984)

The most relevant of Hofstede's dimension for this thesis is the UAI, which measures how much individuals in a society feel comfortable with situations that are new, unknown and different from usual. Countries with a high UAI are more emotional, and less tolerant, while individuals in countries with a low UAI tend to be more open to discussion and try to have as few rules as possible. (Hofstede 1980, 1984)

Hofstede's contribution is notorious and many studies use it as a basis to test or compare countries regarding to culture. Weber and Hsee (1998), for example compare risk perception in the USA and in China, using as a parameter some of Hofstede's dimensions. This thesis however, will not focus on all of Hofstede's dimensions, but considers it one of the main sources of evidences of the existence of cultural differences affecting individual decisions.

These differences are to affect individuals in many ways, and this thesis will check if social entrepreneurs from different countries perceive risk in a different way, and therefore try to answer the following research question:

Are there cross-country differences of social entrepreneurs' risk perception, and if so, what drives these differences?

Hypothesis formulation

The research question can be divided into two main parts, firstly, is questioning the existence of differences, while the second part is related to what makes these differences exist.

The first hypothesis is constructed in order to try to understand the first part of the research question, and therefore it is related to nationality. As mentioned before, Hofstede (1980, 1984) highlighted the existence of country differences. These cultural differences affect individuals in many ways. This thesis believes that such differences exist and are essential to understand individual risk tolerance.

> *H1- There is a relationship between the individual's nationality, and willingness to take risk.*

In order to answer the second part of the research question, related to the drivers of differences, two different sets of hypothesis are created. Firstly, hypotheses related to the individual are formulated. Secondly, hypotheses related more to country specifics are formulated, with this, both the micro and the macro level are contemplated.

Individual Level

In order to try to answer this research question this thesis will try to understand first and foremost, some individual characteristics that relate to higher risk tolerance.

The first Hypothesis is related directly to the first part

Firstly, gender will be tested. Literature suggests that male individuals are, in general, more risk tolerant than females. (Byrnes, Miller & Schafer 1999, Fehr-Duda, SChubert, De Gennaro 2006, Grable 1997) These findings are mostly related to financial risks, however, since the concept of risk is abstract, this risk tolerance can be generalised as an overall concept. Therefore, the first Hypothesis of this thesis is:

> *H2 – There is a positive relationship between being male and willingness to take risk among social entrepreneurs.*

Secondly the importance of age on risk tolerance shall also be tested. The effects of age have been discussed by several authors. In general it is accepted that younger people tend to be

more risk tolerant or possess a lower risk aversion than older. There are several studies highlighting this fact (Palsson 1996, Sung and Hanna 1996). However, recent studies show that this concept may not be fully correct. Some studies show that the effect of age in risk aversion is minimal and other factors are more important, such as gender and race. (Grable 1997) Since there is not a consensus on which way is the age affecting willingness to take risks. The following hypotheses of this thesis are to check whether age has in fact a relationship with risk tolerance, and both, positive and negative, relationships are to be tested.

H3a – *There is a positive relationship between age and willingness to take risk among social entrepreneurs.*

H3b – *There is a negative relationship between age and willingness to take risk among social entrepreneurs*

The third hypothesis of this thesis is related to wealth. Recent studies point that wealthier individuals are more risk tolerant. (Grable 1997, 2000) Older studies however, point into the other direction, arguing that wealthier individuals have more to lose, and therefore should be less risk tolerant (Grable 1997). This thesis will test the assumption from the most recent studies. Therefore the third hypothesis is as it follows.

H4 – There is a positive relationship between personal wealth and willingness to take risk among social entrepreneurs

The forth hypothesis of this thesis is related to self-confidence and optimism. March and Shapira (1992) state "*successful risk takers seem to feel that their past successes in previous risky situations are a result of their skills or their environment's munificence rather than good fortune*" (March & Shapira, 1992, pp. 173). Therefore there is the expectation that individuals, with higher self-confidence and therefore optimism are more risk tolerant. As the following hypothesis states:

H5a – There is a relationship between self-confidence and willingness to take risk among social entrepreneurs

H5b – There is a relationship between optimism and willingness to take risk among social entrepreneurs

In order to understand such differences, another analysis shall be made. The following hypotheses however, will be focused solely on a Macroeconomic level.

Macroeconomic level

In order to test for the importance of the country in individuals risk tolerance, some country specific characteristics will be used to better understand country influences. The following hypothesis will therefore, be related to country and not individual specifics. It is expected that the country situation and institutional background affect individual choice.

Wealth is seen as a determinant for risk tolerance in the individual level, as stated in the third hypothesis. However, the effect of country wealth on the overall risk tolerance has still not been identified. Therefore the first hypothesis of this section will be related to wealth.

> *H6 – there is a positive relationship between country wealth and the overall social entrepreneurs' willingness to take risk within the country*

This thesis believes that the country stability is an essential factor the population's willingness to take risks. Inflation is normally seen as natural, but rather feared economic effect. (Baquero, Díaz de Leon & Torres 2003) Countries with high inflation levels tend to be more instable, since their governments will have to try and balance its' economy, mostly by cutting expenses and raising taxes. Therefore, it is expected that higher levels of inflation will decrease the overall countries willingness to take risks.

> *H7 - There is a negative relationship between inflation and the overall social entrepreneurs' willingness to take risk within the country*

As mentioned before, Hofstede (Hofstede 1980, 1984) developed the idea of different cultural dimensions, one of which relates to uncertainty avoidance. Hofstede believes that some cultures are more willing to take risks than others. One way to measure this is by testing how fast a country adopts a new technology (Hofstede 2001). Therefore, it is expected that countries deeper penetrated by new technologies are more willing to face uncertainty, and thus, the following hypothesis is made.

> *H8 - There is positive relationship between the country's speed of absorption of a new technology and the overall social entrepreneurs' willingness to take risk within the country*

Regarding country specifics, there is a whole section of economic theory dedicated on the understanding the effects of institutions on the economy. The "institutional economics" today considered to have been founded by Thorstein Veblen, takes as essential ideas *"institutions, habits, rules, and their evolution"* (Hogdson 1998, pp. 168). This "school" of economics is now considered the "old" institutionalism whereas the "new" institutionalism uses more modern ways of economic models while having the same core ideals (Hogdson 1998). With this in mind, this thesis will try to test for the existence of any relationship between the country's institutions, responsible for enabling good business transactions, easiness to enter and exit the market and social entrepreneurs risk tolerance. Therefore the following hypothesis was designed.

H9 – There is a positive relationship between a country's ease of doing business and the overall social entrepreneurs' willingness to take risk within the country

Data

The dataset used for this study originates from a survey sponsored by the European Commission, namely: Flash Eurobarometer Data 2010. It is a survey to analyze peoples' entrepreneurial mindset. It examines mostly the motivation, choices, experiences and obstacles linked to self-employment. (European commission 2010)

The Flash Eurobarometer has been introduced in 1990, at first, focusing only on European countries, later, with the addition of countries to the European Union and a number of additional Candidates, the survey has been expanded, and since 2009, even Asian countries are introduced.

The 2010 version, of the survey, covers 36 countries, including all 27 EU member states the EEA/EFTA countries (Norway, Switzerland and Iceland), Turkey and Croatia, the US, and three Asian countries (China, Japan and South Korea). (European commission 2010)

It has over 26,000 concluded interviews, focused on an individual level, and therefore it consists of an extremely efficient way of comparing social entrepreneurship cross country.

Method

With this data in hand, it is possible to analyse some aspects of social entrepreneur's profiles, across different countries in the world.

The full data set comprises 26168 interviews. However, most of the interviewees are not social entrepreneurs. In order to filter the data set, one of the questions from the interview is used to determine social entrepreneurs.

Question Q11 of the survey asks the interviewee to define the importance of certain factors when opening a business. It goes as follows:

"For each of the following elements, please tell me if it was very important, rather important, rather not important or not important at all for making you take steps to start a new business or take over one."

Element **F** of this question is "*Addressing an unmet social or ecological need*". Only individuals, who have previously stated that they are taking steps to start, are running a business, had one in the past or had taken steps to start but gave up, were asked this question. The distribution of the answers can be seen in Table 1 below.

Table 1 – Frequency of social entrepreneurs – Answers to the question Q11_f) – How important is Addressing an unmet social or ecological need for you.

Answer	Freq.	%
Very important	2,441	24%
Rather important	3,494	35%
Rather not important	1,958	20%
Not important at all	1,135	11%
DK/NA	999	10%

DK/NA – Don't know / Not Answered

Therefore, according to this thesis definition of social entrepreneur, "*An individual who starts a venture with the intent to address a social or environmental need*", individuals who answered this question as rather important and very important are considered social entrepreneurs.

In order to isolate social entrepreneurs from non-social entrepreneurs, the dataset was split into 2, one only with observations from social entrepreneurs, with a total of 5935

observations, and one with non-social entrepreneurs, with 4092 observations. With the datasets defined, econometric models can be constructed.

Since the focus of this thesis is on risk tolerance or willingness to take risks the dependent variable of such a model should be then, a reference for risk.

Question D10 asks the interviewee to position themselves to some statements. The question goes as follows: "*Do you strongly agree, agree, disagree or strongly disagree with the following statements?*". The first of these statements is: "*In general, I am willing to take risks*". The distribution of the answers can be seen in table 2 below.

Table 2 – Frequency of answers concerning willingness to take risks

In General I am willing to take risks	Freq.	%
Strongly agree	1,229	21%
Agree	2,920	49%
Disagree	1,395	24%
Strongly disagree	314	5%
DK/NA	77	1%

DK/NA – Don't know / Not Answered

With the answers of this question, a binary variable is created. Individuals who answered "Strongly agree" and "Agree" are considered more willing to take risks. As table 2 shows, the majority of respondents are willing to take risks. This confirms what was already suggested in the literature, the fact that social entrepreneurs are risk takers.

Model A

Table 3 – List of Hypotheses and variables used in Model A

Hypothesis	Variable	Description
H1	Country dummies	One dummy variable for each country, USA as the reference
H2	Sex	Dummy variable, 1 when individual is Male
H3a and H3b	Age (15-29)	Dummy variable, 1 when individual belongs to age group
	Age (30-44)	Dummy variable, 1 when individual belongs to age group
	Age (45-59)	Dummy variable, 1 when individual belongs to age group
H4a	Income	Nominal ordered variable ranging from 1 to 4
H4b	Self-confidence	Nominal ordered variable ranging from 1 to 4
H5	Optimism	Nominal ordered variable ranging from 1 to 4

To test for the reasons of this willingness to take risks and the previously stated hypotheses, a Logit model is to be used. The first 5 hypotheses are to be tested with a model consisting of

personal characteristics extracted from the survey. Table 3aAbove shows the variables and their descriptions.

For the first hypothesis of this first model, dummy variables are created. These variables should help to identify a possible importance of being from a specific country, to the individuals' willingness to take risks. The country used as a reference is the United States, this choice is made due to the extended literature on American willingness to take risks. Therefore, it is expected that most dummies present a negative coefficient. The distribution of countries can be seen in the table 4 below.

Table 4 – Number of observations per country

Country	Freq.	%	Country	Freq.	%	Country	Freq.	%
Belgium	125	2.1%	Netherlands	177	3.0%	Austria	104	1.7%
Czech Republic	109	1.8%	Latvia	71	1.8%	Bulgaria	102	1.8%
Denmark	63	1.1%	Lithuania	99	4.3%	Croatia	109	1.8%
Germany	174	2.9%	Luxemburg	78	3.6%	Romania	109	2.5%
Estonia	104	1.8%	Hungary	137	1.6%	Turkey	149	1.8%
Greece	389	6.6%	Poland	258	1.0%	Norway	106	1.5%
Spain	205	3.5%	Portugal	216	1.4%	Switzerland	90	2.1%
France	219	3.7%	Slovenia	96	1.7%	Iceland	123	5.9%
Ireland	151	2.5%	Slovakia	61	3.7%	USA	352	5.8%
Italy	258	4.3%	Finland	81	4.3%	Korea	346	4.0%
Cyprus	158	2.7%	Sweden	99	3.6%	Japan	239	8.1%
Malta	79	1.2%	UK	218	1.6%	China	481	1.7%

The variable sex shows an almost equal distribution between man and woman, with a mean of 0.49, this indicates that the population of both sexes is almost equal.

The concept behind using 3 dummy variables for age, instead of one continuous, lays on the idea that age might not have linear effect on risk. Grable (1997) already alerts that age may not have a negative effect on risk tolerance and even argues that it may not have any effect. With this variable, it is possible to check for age's effect and whether the effect is linear.

The Survey only collects information from individuals over 15 years old, without a ceiling limit for age. The maximum age of an interviewee was 94 years old. In order to create the groups, individuals 60 years and above are considered as a reference. The frequency of each group can be seen in the Table 5 below. The table shows that the age group of individuals between 45 and 59 years old is the largest one, being followed closely by the middle age

group. The age group of younger individuals is very small, when compared with the other, being only half the size of the age group of individuals between 30 and 44.

Table 5 – Frequency of each age group in the sample

Age group	Freq.	%
15-29	794	13%
30-44	1574	27%
45-59	1973	33%
>60	1565	26%

Regarding measurement of income, the survey relies on a qualitative question that reads as follows: "*Which of the following phrases describe best your feelings about your household's income these days*" with the possible answers being: "*Live comfortably on the present income*", "*Get by on the present income*", "*Find it difficult to manage on the present income*" and "*Find it very hard to manage on the present income*". These answers are quantified as 4, 3, 2 and 1 respectively. This qualitative variable can be used as good proxy for income, since it already controls for possible differences in countries' purchase power. It is interesting to notice that almost 60% are at least able to get by with their present income, and very few find it hard to manage. Therefore, social entrepreneurs of this sample are, in general satisfied with their present income.

Table 6 - Frequencies for Income proxy groups

Describe your feelings about your household's present income	Freq.	%
Live comfortably on the present income	1,215	21%
Get by on the present income	2,785	47%
Find it difficult to manage on the present income	1,285	22%
Find it very hard to manage on the present income	634	11%

For H5a and H5b, the same question used to determine individual's willingness to take risks is used. "*Do you strongly agree, agree, disagree or strongly disagree with the following statements?*" and the statements used are: "*Generally, when facing difficult tasks, I am certain that I will accomplish them*" and "*I am optimistic about my future*". These are used to measure self-confidence and optimism, the same answers are possible. In this case, however, the "1" represents strongly disagree, "2" disagree, "3" agree and "4" strongly agree, for both variables. The distribution for both answers can be seen in Table 7 below

Table 7 – Frequencies for Self-Confidence and Optimism variables

Self-confidence	Freq.	%	Optimism	Freq.	%

DK/NA	91	2%	DK/NA	94	2%
Strongly disagree	75	1%	Strongly disagree	220	4%
Disagree	629	11%	Disagree	916	15%
Agree	3,386	57%	Agree	2,965	50%
Strongly agree	1,754	30%	Strongly agree	1,740	29%

DK/NA – Don't know / Not Answered

Model B

This model is a second step from the previous one. Model B tries to understand the reasons behind the country differences. In order to do that, an Ordinary Least Squares (OLS) regression is made with the coefficients of the previous country dummies as the dependent variable. This will allow this thesis to try to identify the underlying factors of these country's differences and test the remaining hypothesis. All independent variables are taken from the World Bank website. The variables used for this are shown in the table 8 below.

Table 8 – Hypotheses and variables used to test them

Hypothesis	Variable
H6 – Country Wealth	GDP per capita (PPP)
H7 – Inflation	GDP deflator
H8 – Technology spread	Mobiles per capita
H9 – Easiness of doing business	Easiness of doing business

For the sixth hypothesis, which tests for country wealth, GDP per capta, adjusted by purchasing power parity in current US dollars, is used. Due to the nature of this variable, the values are considerably larger than the remaining variables so, all values are divided by 1000.

This variable symbolizes the total amount of country production divided by its population. GDP is often used as proxy for country wealth and its variation as a proxy for growth. However, the absolute value of country GDP is not a synonym of personal wealth that is why the per capita value is used. As a side note, GDP growth could also be an interesting measure for growing wealth, however, the year in which the research was made is marked by the latest economic crisis. Therefore, most countries in the world presented a negative GDP growth ratio and so this measure is not used in the thesis. There is a big difference between the values of GDP per capita in the countries covered by the dataset. Luxemburg has a GDP per capita of 105044 current American Dollars (USD). This is the highest in the dataset and in fact, the second highest in the world (after Liechtenstein). While China, has the smallest value in this dataset, with 3744 USD, this of course due to the country possession of the largest population in the planet, with over 1.3 Billion inhabitants.

For the seventh hypothesis, the GDP deflator is used. This indicator shows the price changes in the country. As for the GDP per capita there is a great difference between the covered countries. Norway presents the lowest GDP deflator, with -4%. Iceland with 8.6% is the country with the highest deflator. It is interesting to notice that even with these differences the mean of this variable is 1.2. This is showing that among these countries, the overall level of inflation is low.

For the eighth hypotheses, a relatively new and extremely widespread technology is chosen as a proxy. The amount of mobiles per capita is used as a measurement of the countries speed to absorb new technologies. This choice is made following the article by Geert Jan Hofstede (2001), in which he analyses the relationship between technology adoption and the original Hofstede dimensions. He found a significant relationship between uncertainty avoidance and mobile phones adoption. Another reason behind the usage of such a proxy, instead of the actual Hofstede measured dimension, is the lack of data for all analysed countries.

Mobile phones also have an important function of connecting people. It is a growing market and more recently, has been changing society as a whole. This technology is a source of many studies, as Corbett (2009) states, "*The cell phone is changing the way in which all of this interaction occurs, which makes it sociologically relevant*" (Corbett 2009, pp. 2). Therefore, it is a good proxy of new technology, and its spread can be measured by how intense its use is.

As table 9 shows, there is a large difference between the numbers of mobiles across the analysed countries.

China, has the smallest ratio with only 0.56 mobiles per person, Estonia, on the other hand, has twice as many mobiles as it has inhabitants, with an amazing ratio of 2.03 mobiles per capita. The mean of this variable is also an interesting point, since it is above 1, meaning there is a tendency for people to own more than one mobile.

Finally, for the final hypothesis, the ease of doing business index shall be used. This index is part of the *Doing Business Project*, which is an initiative by the World Bank and the International Financial Corporation. The project started its development in 2002, but got new strength after the economic crisis, when regulatory environments became a centre of attention worldwide. The index in 2009 covered 183 countries and ranked according to the ease of doing to business (EoDB). The ranking is developed by analysing 11 different areas,

"*regulations for starting a business, dealing with construction permits, registering property, getting credit, protecting investors, paying taxes, trading across borders, enforcing contracts and closing a business—as they apply to domestic small and medium-size enterprises. It also looks at regulations on employing workers as well as a new measure on getting electricity*"[3] (Doing Business Project, 2011, pp. 12) and it is "*for the present, the only standard tools used across a broad range of jurisdictions to measure the impact of government rule-making on the cost of doing business*" (Doing Business Project, 2011, pp. 12). Therefore, it is a very good tool to try to identify the institutional background existing in a country.

This index is constructed so that the rank is the value of the variable, but this means that 1 is the best possible value, and 183 is the worst. Therefore, in order to have a better indication of the relationship between willingness to take risk and EoDB, the variable is recoded. The country rank is then subtracted of 100, so the UK, which is ranked 4th will have the value 96, while Greece will have a value of 3. With this, if the coefficients are positive is should indicate a positive relationship. The number 100 was choses due to the fact that all countries are ranked better than 100.

On this thesis dataset, only Malta does not possess any information for the index. Out of the remaining countries, it is interesting to notice that almost all of them are on the upper half of the ranking. The only exception is Greece, ranked on place 97. What makes sense, since this sample consists mostly of highly income countries, which indicates that the sample may be biased, however, it still manages to cover a large range of countries.

Table 9 – Summary for variables used in Model B

Variable	Obs.	Mean	Min	Max
GDP Per capita	35	30.44	6.83	83.82
Deflator	35	1.34	-4	8.6
Mobiles per Capita	35	1.22	0.8391	2.0297
EoDB	34	64.5	3	96

GDP: gross domestic product. Mob: mobiles per capita. EoDB: ease of doing business.

In order to test whether these variables are useful together, a Pearson Correlation test is made. This test also enables to see how these variables behave among each other. This test can be seen in Table 10

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[3] http://www.doingbusiness.org/~/media/FPDKM/Doing%20Business/Documents/Annual-Reports/English/DB11-Chapters/DB11-About.pdf

These variables do not presents high levels of correlation, which means that these variables can be used in the same regression without shading the regression results. Looking at the relationships, it is interesting to notice that there are many negative relationships. Countries with high levels of GDP per capita present high level of inflation, which means that these economies present some more stables prices. However, there is also a negative relationship between GDP per capita and EoDB which indicates that countries with high levels of income have stronger institutional background and more rules.

Table 10 – Pearson Correlation Matrix Model B

	GDP Per capita	Deflator	Mobiles per Capita	EoDB
GDP Per capita	1			
Deflator	-0.3208*	1		
Mobiles per Capita	0.1343*	-0.1329*	1	
EoDB	0.2807*	-0.3806*	-0.0589*	1

EoDB: ease of doing business. *p<0.05

With these variables in hand, both models are developed, and on the following section, the results from both models are to be discussed.

Results

Model A

Model A is run for social entrepreneurs and afterwards for non-social as well. The results of both regressions are extremely similar on the individual level, but there are some significant differences when it comes to country differences. Apparently, there are more differences for social entrepreneur than for non-social. The results for the regression for non-social entrepreneurs can be seen in Appendix 2, while the result for social-entrepreneurs (Model A) can be seen in Table 11 below.

Most of the variables are significance at least on a 10% level. The values of the coefficients show that some interesting results.

The value which controlled for sex presented a positive coefficient and significance on a 1% level. This indicates that being male increases the chances of the social entrepreneur to be willing to take risks.

The 3 variables which controlled for age groups all also proved to be significant on a 1% level and presented positive coefficients, meaning that all 3 age groups are more willing to take risks than the reference group of individuals over 60 years. These differences are greater the younger is the age group. Meaning that, younger individuals are more willing to take risks than older ones. This difference is also striking when it comes to magnitude, since the younger age group presented a coefficient of 0.867, meaning that individuals in this age group are 80% more willing to take risks than the reference older group.

The variable which controlled for income is not significant. However, it is interesting to notice that the coefficient is negative, indicating a negative relationship between higher levels of income and willingness to take risk. This relationship however, is not very strong, as suggested by Grable (1997), this relationship is weaker than others, such as age or sex.

This model also showed a significant relationship between self-confidence and optimism with regard to risk, with coefficients of 0.4 and 0.23 respectively. This result shows that self-confidence is important in the decision to take risks. This shows that individuals who have good ideas of the present and future are more willing to take risks, believing that they will success in most situations.

The country dummies presented some striking results. Most of the country coefficients are significant in some level, showing that indeed, there are significant differences compared to the USA. As mention before, since the reference country is the USA, most of the coefficients were expected to be negative, and that in fact happened, meaning that indeed the USA are a country where individuals are more willing to take risks.

Table 11 – Model A Results of Logistic Regression – Social Entrepreneurs - Willingness to take risk as a dependent Variable (1= willing to take risks, 0= non willing to take risks)

	Coefficient		Coefficient				
Sex	0.235***	Malta	0.002	Number of obs.	=	5919
Age Group – 15-29	0.867***	Netherlands	-0.465**	LR chi²(42)	=	503.2
Age Group – 30-44	0.52***	Austria	-0.851***	Prob > chi²	=	0
Age Group – 45-59	0.385***	Poland	-0.48**	Pseudo R²	=	0.07
Income	-0.033	Portugal	-0.77***			
Self – Confidence	0.403***	Slovenia	-0.93***			
Optimism	0.233***	Slovakia	-0.398			
Belgium	-1.043***	Finland	-0.646**			
Czech Republic	-0.537**	Sweden	-0.155			
Denmark	-0.785**	UK	-0.51**			
Germany	-0.8***	Bulgaria	0.126			
Estonia	-0.414	Croatia	-1.125***			
Greece	-0.574***	Romania	0.015			
Spain	-0.308	Turkey	-1.042***			
France	-0.347	Norway	-0.299			
Ireland	-0.566**	Switzerland	-0.551**			
Italy	0.236	Iceland	-1.405***			
Cyprus	-0.216	Korea	-0.884***			
Latvia	-1.004***	Japan	-1.157***			
Lithuania	-0.658**	China	-0.872***			
Luxemburg	-0.070	Constant	-0.866***			
Hungary	-1.432***					

*** p<0.01, ** p<0.05, * p<0.1

However, it is not only the existence of these differences that are striking, but also their magnitude. Hungary has the lowest coefficient, -1.4329, meaning that individuals from Hungary are 145 percentage points less willing to take risks than in the reference country, USA. This is quite interesting, especially because Hungary is not an isolated case, 6 other countries (Iceland, Japan, Croatia, Belgium, Turkey and Latvia) presented coefficients smaller than -1.000. And only 4 countries (Malta, Romania, Bulgaria and Italy) presented positive coefficients. However, all the countries with coefficients larger than -0.45 did not show significance on the analysed levels. The interpretation behind this is that for these countries there is no significance difference from the USA.

This information sheds light on some of the factors which influence the individual risk tolerance. However, in order to fully answer the proposed research, the reasons behind all these differences must be analysed.

Model B

As in Model A, Model B is also run for non-social entrepreneurs, but in this case, the adjusted R² is negative, indicating that it was not a good model and therefore this thesis will not discuss the results from this regression. However, the results can be seen in under Appendix 5.

Model B therefore only uses the coefficients from social entrepreneurs in order to try to indent the some factors that may show the reason behind the country differences found in Model A. The results from Model B are presented in Table 12 below.

Table 12 – Results Model B – OLS regression – Country' willingness to take risks differences as dependent variable

	Coefficient	P-Value	Significance			
GDP per Capita	0.00531	0.303	-	Number of observations	=	34
Deflator	-0.04306	0.146	-	R-squared	=	0.232
Mobiles Per capita	0.432808	0.155	-	Adjusted R-squared	=	0.126
EoDB	-0.00484	0.107	-			
Constant	-0.93838	0.045	**			

*** p<0.01, ** p<0.05, * p<0.1*

Unlike the previous model, none of the variables of Model B present significance, on any of the analysed levels, with an adjusted R² of 0.126, this model shows that these factors are not influential in the country differences.

The variable controlling for GDP per capita presented the highest P-values, meaning that it is the further away from significance, while EoDB falls short by little. However, besides simply analysing the P-values, the coefficients also show something interesting. While GDP per capita is positive and very close to zero the variables for inflation and EoDB are negative and also close to zero, showing that these variables have very little influence in the country differences, even if they were in fact significant. However, when looking at the coefficients, something else is striking. The relationship between willingness to take risks and EoDB is negative, meaning that individuals in countries where it is easier to do business are less willing to take risks.

In order to check if these results happen to all social entrepreneurs, the same model is tested for the 2 group of individuals who are considered social entrepreneurs, these are, those who answered that meeting social and environmental needs was rather important and very important.

Model A is then run for both groups (the results are quite similar and can be seen in the Appendix 4) and the coefficients used to create the same kind of model as B, these new models can are called Model C (rather important) and D (very important). The results for these 2 groups differ considerably as it can be seen in table 13 below.

Table 13 – Results Model C and D – OLS regression – Country' willingness to take risks differences– Different groups of social entrepreneurs

	Model C Rather Important	Model D Very Important
	Coefficients	Coefficients
GDP per Capita	0.0093*	-0.0006
Deflator	-0.0277	-0.072*
Mobiles Per capita	0.5958*	0.070
EoDB	-0.0058*	-0.0036
Constant	-1.0951**	-0.8933
Number of observations	34	34
R-squared	0.3013	0.1211
Adjusted R-squared	0.2049	-0.0001

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

The difference in these results comes as a surprise. According to these models, there is a great difference between the individuals who consider opening a business to meet a social or environment need very important and rather important.

First analysing Model D, it is important to notice that the Adjusted R^2 is negative. This means that the model is not capable of explaining the variance of the dependent variable, willingness to take risks. This means that the overall variance of the willingness to take risk variable is not affected by the variables chosen for this thesis.

However, when looking at Model C, most of the variables do present significant at least on a 10% level, and this model present an adjusted R^2 of 0.204, therefore this model can be used to try to understand some of the factors that drive social entrepreneurs' willingness to take risk country differences.

Model C shows that GDP per capita affects these country differences in a positive way, meaning that countries higher levels of wealth could indicate higher willingness to take risks, however, the magnitude of the coefficient is very low, therefore, a great difference in GDP per capita is necessary to generate some country differences.

Inflation, represented by the GDP deflator, presented a negative coefficient, but with no significance on the analysed levels, however, the direction of the coefficient shows that a small change of inflation could generate effects on overall country's willingness to take risk variance.

The variable which controls for the speed of technology adoption presented the highest coefficient, 0.5958 within the 10% significance level. This indicates that the number of mobiles per capita has a strong relationship with country differences in willingness to take risks.

The variable controlling for EoDB has again presented, as in Model B, a negative coefficient. With a coefficient of -0.0058, and significant on a 10% level, this variable shows that for individuals within this group there is a negative relationship between willingness to take risks and EoDB, and improvements in a country's institutions could then make people less willing to take risks.

Robustness tests

All variables are tested for multicolinearity, in all models, through the Pearson correlation test. No variables have presented high levels of multicolinearity. Several variables were tested for these models but were excluded due to multicolinearity problems. The number of internet users was tried as an alternative for technology spread, and a corruption index was tried as EoDB, but both presented multicolinearity problems. Therefore, the variables chosen for the models represent the best available ones for the models.

Discussion / Conclusion

This thesis provides a different perspective on social entrepreneurs' willingness to take risks. Using a unique dataset, it was possible to show some significant cross country differences. It proves to be an advance in the study of social entrepreneurs across the world. Following works such as (Hoogendoorn, Van der Zwan and Thurik, 2010) this thesis manages to show the existence of relationships between age, sex, self-confidence and optimism, with willingness to take risks. It also showed the lack of strength between the relationship between income and willingness to take risks.

Table 14 – Overview of empirical results

Dependent variable: Willing to take risks (value 1) versus non willing to take risks (value 0)	Empirical result	Hypothesis (not) supported
Country Differences	Existing relationship	H1 supported
Individual Level		
Sex (Male)	+	H2 supported
Age (Positive)	-	H3a not supported
Age (Negative)	-	H3b supported
Wealth	+*	
Self – Confidence	+	H5a supported
Optimism	+	H5b supported
Dependent variable: Country dummies coefficients	Empirical result	Hypothesis (not) supported
Macroeconomic Level		
Country Wealth	+	H6 supported**
Inflation	-*	
Technology spread	+	H7 supported**
EoDB	-	H8 not supported**

*not significant results, ** only in model C*

The existence of country differences was supported by the dataset and then supporting H1, and some of the underlying factor which generate higher chances of an individual to be willing to take risks.

Most of the hypotheses proposed for individual choice are supported. H2 is supported, since among the social entrepreneurs surveyed, male ones presented a higher risk tolerance. The variable which controls for sex is significant in a 1% level. This result goes together with most of the literature on the subject.

The relationship between age and willingness to take risks also proved to be negative and significant, therefore, denying H3a and supporting H3b. This result shows the opposite from what is proposed by Grabble (1997). However, this thesis focuses only on social entrepreneurs, showing that social entrepreneurs are in fact different than the average person, when it comes to willingness to take risks.

Surprisingly, H4, which tested for the influence of individual income, could not be supported by this dataset, and the coefficients indicated a negative relationship between income and willingness to take risk.

H5a and H5b, which tested for the influence of individual self-confidence and optimist, respectively, in risk taking also proved to be significant on a 1% level. Showing that, individuals who are satisfied with themselves are more willing to take risks when necessary.

Therefore an overview of some of the factor affecting individuals to be more willing to take risks is achieved. The hypotheses which tried to understand the reasons behind the country differences were supported to some extent. While the model with the full group of social entrepreneurs none of the hypotheses could be tested, when the group is divided into two, some interesting facts were found.

The differences found in the groups of social entrepreneurs in Models C and D came as a big surprise. While it is unsure what generates such differences the different types of social entrepreneurs, the simple existence of such difference is interesting. Both groups possess similar socio demographic characteristics therefore the difference between the 2 groups goes deeper. Therefore, the data within this dataset is not able to indicate the reasons behind such differences, however, it is possible to suppose that individuals with high social conscience are willing to take risks regarding macro-economic circumstances, this again, is only a supposition. In order to better understand these differences, a deeper study on these 2 groups should be made, but this escapes the scope of this thesis.

The results from Model C are able to provide enough evidence for most of the hypotheses, while Model D did not present good enough adjusted R^2.

H6 is only supported by Model C, indicating that for this group of social entrepreneurs, overall country wealth indeed affects willingness to take risks. Nevertheless this relationship

is not that strong, the coefficients are quite small in all regressions, indicating that a great change in country wealth is necessary to generate differences in willingness to take risks.

H7 could not be supported by the models, only in Model D which is not a significant model. The variable GDP deflator did not present significance in any of the analysed levels nor significant models. However, as expected by the Hypothesis, the coefficient indicates a negative relationship between the overall inflation level and willingness to take risk. This indicates, in countries with unstable prices, social entrepreneurs are less willing to take risks.

H8 is also supported by model C. The variable that measures the number of mobiles per capita is significant on a 10% level, and with a rather large coefficient. This shows that indeed there is a relationship between the spread of new technology and willingness to take risks. The relationship between mobile phones, and social entrepreneurship, can actually be far deeper than simply the speed of adoption, this however, is a topic for another research, since it escapes the scope of this thesis.

The final hypothesis of this this thesis, H9, is not supported by Model C, it is actually denied. The coefficient indicates a negative relation between willingness to take risk and ease of doing business. This comes as a surprise because it means that in countries where there are better rules and institutions, people are less willing to take risks. This could be a result of a too well structured society, where taking risks are not on the scope of society.

Therefore this thesis contributes to the existing literature in several ways. Very few studies so far had adventured in the comparison of social entrepreneurs cross countries, specially, in such a broad range of countries. Therefore, this thesis manages to fill part of the existing gap on the social entrepreneur subject, while also giving an overview of possible factors that generate such differences.

Limitations

At the same time several limitations have to be pointed. The first of them is regarding the concept of social entrepreneurship, due to its subjectivity many interpretations can be made with the answers of the survey, adding to that, it is not possible to confirm if all the individuals who answered to be social entrepreneurs opened indeed an enterprise with social or environmental needs.

It is also important to notice that the group of people aged between 15 and 29 is under-represented. Another variable that limited the study is the one measuring individual income, it would be interesting to have more quantitative data on income, together with the qualitative data. Also, the lack of a time series shades some of the results, since 2009 was a very atypical year in the World's economy due to the crisis. On the Models, these presented in general low adjusted R^2.

Future research

Although this thesis has some limitations, it still can be considered as "a stepping stone" for further research. The relationship between mobiles phones and risk is a very interesting subject that could be analysed better by future research. The difference between the different levels of social entrepreneurs is also something yet to be studied.

Future research could also try to find out other factor that create cross-country differences in social entrepreneurs' willingness to take risk, besides the ones proposed by this thesis.

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Appendix

Appendix 1 – List of hypotheses, variables and their sources

Hypothesis	Variable	Source of Variables
H1	Nationality	Flash Eurobarometer Data 2010
H2	Sex	Flash Eurobarometer Data 2010
H3a	Age	Flash Eurobarometer Data 2010
H3b	Age	Flash Eurobarometer Data 2010
H4	Income	Flash Eurobarometer Data 2010
H5a	Self-confidence	Flash Eurobarometer Data 2010
H5b	Optimism	Flash Eurobarometer Data 2010
H6	GDP per capita (PPP)	World Bank (2009)
H7	GDP Deflator	World Bank (2009)
H8	Mobiles per capita	World Bank (2009)
H9	EoDB	World Bank (2009)

Appendix 2 – Model A Results of Logistic Regression – Social and non-social entrepreneurs – Willingness to take risk as a dependent Variable (1= willing to take risks, 0= non willing to take risks)

	Social entrepreneurs			Non-social entrepreneurs		
	Coefficient	P-Value		Coefficient	P-Value	
Sex	0.235	0.000	***	0.421	0.000	***
Age Group – 15-29	0.867	0.000	***	0.998	0.000	***
Age Group – 30-44	0.521	0.000	***	0.459	0.000	***
Age Group – 45-59	0.385	0.000	***	0.350	0.000	***
Income	-0.033	0.353	-	0.049	0.254	-
Self – Confidence	0.404	0.000	***	0.388	0.000	***
Optimism	0.233	0.000	***	0.253	0.000	***
Belgium	-1.044	0.000	***	-0.807	0.003	***
Czech Republic	-0.538	0.041	**	-0.900	0.000	***
Denmark	-0.785	0.012	**	-0.386	0.178	-
Germany	-0.801	0.000	***	-0.483	0.032	**
Estonia	-0.414	0.129	-	-0.636	0.023	**
Greece	-0.574	0.003	***	-0.432	0.102	-
Spain	-0.308	0.173	-	-0.134	0.618	-
France	-0.347	0.108	-	0.064	0.819	-
Ireland	-0.567	0.017	**	-0.477	0.159	-
Italy	0.236	0.298	-	-0.258	0.295	-
Cyprus	-0.216	0.378	-	-0.118	0.697	-
Latvia	-1.005	0.001	***	-0.663	0.051	*
Lithuania	-0.658	0.015	**	-1.223	0.000	***
Luxemburg	-0.071	0.828	-	-0.520	0.170	-
Hungary	-1.433	0.000	***	-1.330	0.000	***
Malta	0.003	0.993	-	-1.079	0.005	***
Netherlands	-0.466	0.040	**	-0.610	0.006	***
Austria	-0.851	0.001	***	-1.070	0.000	***
Poland	-0.481	0.021	**	-0.018	0.946	-
Portugal	-0.770	0.000	***	-0.757	0.001	***
Slovenia	-0.931	0.000	***	-0.454	0.160	-
Slovakia	-0.398	0.231	-	-0.353	0.345	-
Finland	-0.646	0.026	**	-0.276	0.264	-
Sweden	-0.155	0.598	-	-0.733	0.008	***
UK	-0.511	0.018	**	-0.479	0.050	*
Bulgaria	0.127	0.673	-	0.250	0.426	-
Croatia	-1.125	0.000	***	-0.911	0.011	**
Romania	0.015	0.959	-	0.312	0.369	-
Turkey	-1.043	0.000	***	-1.500	0.000	***
Norway	-0.300	0.286	-	-0.188	0.516	-
Switzerland	-0.552	0.049	**	-0.291	0.354	-
Iceland	-1.405	0.000	***	-1.318	0.000	***
Korea	-0.884	0.000	***	-0.800	0.001	***
Japan	-1.157	0.000	***	-1.871	0.000	***
China	-0.873	0.000	***	-1.337	0.000	***
Constant	-0.866	0.000	***	-1.383	0.000	***
Observations	5919			4060		
LR chi2(42)	503.2			445.15		
Pseudo R2	0.0695			0.0846		

*** p<0.01, ** p<0.05, * p<0.1

Appendix 3 – Data Model B

Country	GDP per capita	GDP Deflator	Mobiles per capita	EoDB	Coefficients Country Dummies
Belgium	36.31	1.1	1.1511	78	-1.044
Czech Republic	25.58	2.7	1.3592	18	-0.5379
Denmark	37.72	0.4	1.3394	94	-0.7852
Germany	36.34	1.4	1.2824	79	-0.8008
Estonia	19.69	-0.6	2.0297	83	-0.4143
Greece	29.62	1.3	1.1783	3	-0.5741
Spain	32.15	0.2	1.1095	52	-0.308
France	33.67	0.5	0.9509	72	-0.347
Ireland	40.7	-3.2	1.0945	92	-0.5669
Italy	32.43	2.1	1.5047	24	0.236
Cyprus	30.85	-0.7	1.1223	65	-0.2162
Latvia	16.44	-0.7	0.9946	73	-1.0045
Lithuania	17.31	-2.1	1.4857	74	-0.6582
Luxemburg	83.82	-0.3	1.4442	58	-0.0707
Hungary	20.31	4.6	1.1766	48	-1.4329
Malta	24.81	2.3	1.0171	-	0.0029
Netherlands	40.68	-0.3	1.2813	71	-0.4658
Austria	38.82	0.8	1.4076	69	-0.8512
Poland	18.91	3.7	1.1678	27	-0.4807
Portugal	24.92	0.1	1.4276	67	-0.7703
Slovenia	27.13	1.9	1.028	57	-0.9305
Slovakia	22.88	0	1.0147	60	-0.3983
Finland	35.27	0.9	1.4424	89	-0.6461
Sweden	37.38	2	1.2283	82	-0.1552
UK	35.15	1.4	1.2998	96	-0.5106
Bulgaria	13.87	4.1	1.3997	49	0.1269
Croatia	19.99	3.3	1.3617	11	-1.1251
Romania	14.28	6.5	1.1813	46	0.0152
Turkey	13.67	5.2	0.8391	40	-1.0429
Norway	56.21	-4	1.1054	93	-0.2998
Switzerland	45.22	0.3	1.1971	76	-0.5518
Iceland	36.8	8.6	1.0938	86	-1.4051
Korea	27.1	0.9	0.972	95	-0.8845
Japan	32.42	3.4	0.9835	85	-1.1572
China	6.83	-0.9	0.9009	81	-0.8728

Appendix 4 – Country dummies coefficients used for Model C and D

Country	How important is it to meet a social or environmental need when opening a business?	
	Rather important (Model C)	Very important (Model D)
	Coefficients Country Dummies	Coefficients Country Dummies
Belgium	-0.9329	-1.20141
Czech Republic	-0.34492	-0.87403
Denmark	-0.83189	-0.60015
Germany	-0.5069	-1.46177
Estonia	-0.25134	-0.65433
Greece	-0.5722	-0.63818
Spain	-0.12762	-0.5792
France	-0.43091	-0.24093
Ireland	-0.45171	-0.73378
Italy	0.45543	-0.0519
Cyprus	-0.29947	-0.11993
Latvia	-0.88602	-1.1429
Lithuania	-0.85849	-0.32027
Luxemburg	0.435893	-0.82713
Hungary	-1.2563	-1.71579
Malta	0.210722	-0.21513
Netherlands	-0.16026	-0.84242
Austria	-0.47513	-1.35092
Poland	-0.35028	-0.67122
Portugal	-0.74053	-0.69889
Slovenia	-0.76066	-1.18992
Slovakia	-0.35519	-0.366
Finland	-0.34609	-1.81822
Sweden	-0.2364	0.230504
UK	-0.32428	-0.73881
Bulgaria	0.336731	-0.22613
Croatia	-0.95721	-1.38449
Romania	0.211705	-0.24759
Turkey	-0.89212	-1.18368
Norway	-0.24356	-0.2377
Switzerland	-0.58636	-0.42141
Iceland	-1.27107	-1.58558
Korea	-0.91608	-0.77021
Japan	-1.17651	-1.1947
China	-0.73866	-1.05466

Appendix 5 – Results Model B – OLS regression – Social and non-social entrepreneurs - Country dummies' coefficients as dependent

	Social entrepreneurs			Non-social entrepreneurs		
	Coefficient	P-Value	Significance	Coefficient	P-Value	Significance
GDP per Capita	0.0053	0.303	-	0.0046	0.507	-
Deflator	-0.0431	0.146	-	-0.0403	0.306	-
Mobiles Per capita	0.4328	0.155	-	0.2019	0.616	-
EoDB	-0.0048	0.107	-	0.0046	0.251	-
Constant	-0.9384	0.045	**	-1.1054	0.048	**
Observations	34			34		
R²	0.2321			0.0946		
Pseudo R2	0.126			-0.0303		