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An analysis of differences  
between sustainable and  
traditional entrepreneurs



Sophie Vonck

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Master Thesis Entrepreneurship and  
Strategy Economics

*An analysis of differences between  
sustainable and traditional entrepreneurs:  
Are they different and how?*

Name : Sophie Vonck

Studentnumber : 318528

Supervisor : B. Hoogendoorn

City : Rotterdam

Date : July 11, 2013

# Abstract

In this thesis the drivers and characteristics of sustainable entrepreneurs were compared to the drivers and characteristics of traditional entrepreneurs. Differences are pointed out and explained using existing literature concerning sustainable entrepreneurship, human capital theory and the social capital theory. For this research novel data from the GEM-survey 2009 special topic: 'social entrepreneurship activity' has been used, the first dataset that allows for a quantitative detailed empirical analysis of individual drivers and antecedents of sustainable entrepreneurship. Based on previous literature two approaches were used in order to find and categorize possible differences; the human capital theory and the social capital theory. Following the human capital theory indicators for knowledge and experience were included in the empirical model. For social capital indicators concerning bonding and bridging social capital were included. A positive effect of human capital on the probability of being a sustainable entrepreneur could only partly be proven. Furthermore, the positive influence of social capital could not be proven in the empirical research. Overall, the results of the empirical analysis prove the existence of significant differences between sustainable and traditional entrepreneurs in this (preliminary) research. These results contribute to the existing literature concerning empirical research on sustainable entrepreneurship and suggest further exploration and research in more detail by researchers in this field.

**Keywords:** sustainable entrepreneurship, human capital, social capital, GEM-survey 2009 special topic: 'social entrepreneurship activity'

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# 1. Introduction

In modern society, awareness is growing that our way of living has a negative impact on the state of the earth and the people living on it. Researchers found ecosystem degradation and global climate change caused by the way our society consumes natural resources and produces energy (Daneke, Hall, & Lenox, 2010). It is becoming clear, a transformation to more sustainable products and processes is necessary in order to start protecting the earth. Entrepreneurs are increasingly being cited as an important factor to start and enhance this transformation (Daneke, Hall, & Lenox, 2010). They are seen as the vanguard in the shift to a new form of capitalist development that can help to address the fears over global warming, climate change and their associated negative environmental impacts (Gibbs, 2009). Furthermore, these sustainable entrepreneurs, and sustainable development, are being cited as important for the people living on the earth, as one of their underlying drivers is creating social value (Brown, 2006; Brugmann & Prahalad, 2007). The first acknowledgement of sustainable development was given by the Brundtland Commission and the definition formulated by this commission is 'meeting the needs of the present without compromising the ability of future generations to meet their own needs'. In order to achieve the goal formulated in this definition, there are possibilities and opportunities for entrepreneurs. These opportunities exist because entrepreneurs typically focus on identifying new opportunities for creating value for customers or users and commercially developing those opportunities to establish a profitable business (Shane & Venkataraman, 2000). Schumpeter (1934) was the first economist describing these opportunities for entrepreneurs as new products and/or services, new markets, new production processes, new raw materials, or new ways of organizing existing technologies.

Compared to traditional entrepreneurs, who are widely understood to be individuals who act self-interestedly and whose goals are economical (Vega, 2007) and thereby contribute to economic growth, Schumpeter (1934) recognized that entrepreneurs also could be driven by non-economic motives by emphasizing additional goals such as sustainability. These so called sustainable entrepreneurs are driven by more goals than just the economical ones (Schlange, 2006; Cohen & Winn, 2007). In addition to research on traditional entrepreneurs, research on sustainable entrepreneurs is needed in order to create a more complete analysis on their influence on the economy. Specifically, research into the emerging field of sustainable entrepreneurship examines whether and to what extent entrepreneurs with an environmental focus can not only contribute to economic growth, but also to reduced environmental degradation (Hall, Daneke and Lenox, 2010) and to social objectives (Lepoutre, Justo, Terjesen, & Bosma, 2011). Sustainable entrepreneurs are

said to have a different mentality than traditional entrepreneurs because of their broader view (Dean & McMullen, 2007). This statement is reinforced by their attention to environmental causes, employee-friendly working conditions, an interest in wider social issues than bottom-line profits and a concern for the long-term implications of their business activities. (Harvey, 2007) Compared to traditional entrepreneurs, sustainable entrepreneurs are said to be more focused on a triple bottom line, including environmental and social objectives next to the economic objectives.

While looking at the different goals of different entrepreneurs, the question arises who the people behind these goals are and what are their drivers. Research on the individual characteristics of entrepreneurs defined some important drivers and characteristics of individuals clarifying which individuals become an entrepreneur instead of an employee. Specifying this finding for the drivers and characteristics of sustainable against traditional entrepreneurs will add a further layer of analysis in this research. Instead of looking at the occupational choice, whether an individual becomes an entrepreneur or not, this research will look at the allocation of entrepreneurship, looking at the type of entrepreneurship an individual chooses. In order to explain this choice the human capital theory and the social capital theory will be used.

## **1.1 Research question**

In this thesis the individual characteristics and drivers of sustainable entrepreneurs will be compared to the individual characteristics and incentives of traditional entrepreneurs. Do differences between the two groups exist and if so, what are the main differences and can we explain them. In order to find differences in the characteristics, drivers and incentives of sustainable entrepreneurs (against traditional entrepreneurs) the following research question is formulated:

*'Are sustainable entrepreneurs different from traditional entrepreneurs, and how?'*

When investigating the main research question, the following sub questions will be answered: First, what is sustainable entrepreneurship? Furthermore, the influence of entrepreneurial knowledge, human capital and social capital will be examined on the chance of becoming a sustainable against becoming a traditional entrepreneur. Lastly the difference in risk appetite will be examined.

## **1.2 Social relevance**

As described earlier, entrepreneurial activity with a focus on sustainability increasingly is being cited as an important factor for the transformation of the economy to an economy with opportunities for a sustainable future, which makes it important to look at the drivers of individuals with such a focus. Governments or organizations with objectives as sustainable development could implement more effective policies to achieve their goals. The results of this research could give these parties more

insight in the differences between the different types of entrepreneurs. These insights could help indicate directions for the right policy environment for sustainable entrepreneurs, as these entrepreneurs are becoming more and more important in the economy.

### **1.3 Scientific relevance**

The field of traditional entrepreneurship, in which efficiency and profits are the main objectives of the entrepreneurs, is studied extensively. Next to traditional entrepreneurship (Knight, 1921; Schumpeter, 1934), researchers have identified some other types of entrepreneurship in the past years. One of these is *sustainable* entrepreneurship (Young & Tilley, 2006; Parrish, 2007). The research field of sustainable entrepreneurship is still emerging and is gaining interest the last years. Trends show a clear increase in academic interest in the topic (GEM Report on Social Entrepreneurship, 2009). However, literature is still scarce and large scale quantitative empirical research is lacking. Quantitative empirical research that allows for a detailed empirical analysis of individual drivers and antecedents of sustainable entrepreneurship was hard to conduct because of missing data (Lepoutre, Justo, Terjesen, & Bosma, 2011). The recently published data of the GEM-database (Survey 2009) makes it possible to conduct such a research. This thesis will conduct a research with the focus on the individual characteristics and drivers of the sustainable entrepreneurs, while comparing these with the characteristics and drivers of the traditional entrepreneurs. As this is the first paper researching differences between traditional and sustainable entrepreneurs on the individual level, theories from different fields of research will be used in order to provide a solid foundation for the preliminary research conducted in this paper (Busenitz, West, Shepherd, Nelson, Chandler, & Zacharakis, 2003). Specifically, the human capital and social capital theory will be used in this preliminary paper.

### **1.4 Structure**

The rest of the paper is structured as follows; in chapter 2 the theoretical framework is discussed. It contains the relevant existing literature and some important definitions. Based on the discussed literature hypotheses are formulated in chapter 3. The data and methodology for the empirical study are discussed in chapter 4, followed by the results in chapter 5. Finally, chapter 6 and 7 provide the discussion, limitations of the study and the conclusion.

## 2. Theoretical framework

In the theoretical framework first the concept of entrepreneurship will be discussed, and the different allocations of entrepreneurship will be described. When an individual becomes an entrepreneur there are several possible ways in which the start-up can be shaped. Furthermore, different objectives and goals can be defined by the entrepreneur. This is why different forms of entrepreneurship will be explained, and clear boundaries will be drawn towards the other forms of entrepreneurship. Also, in the following subsection the definition used for sustainable entrepreneurship in this thesis will be described. In the second subsection (sustainable) entrepreneurship at the individual level will be reviewed in the light of the human capital theory and social capital theory. Furthermore, the second subsection contains past research on sustainable entrepreneurship regarding the individual level, including the formation of hypotheses.

### 2.1 Framing the research field

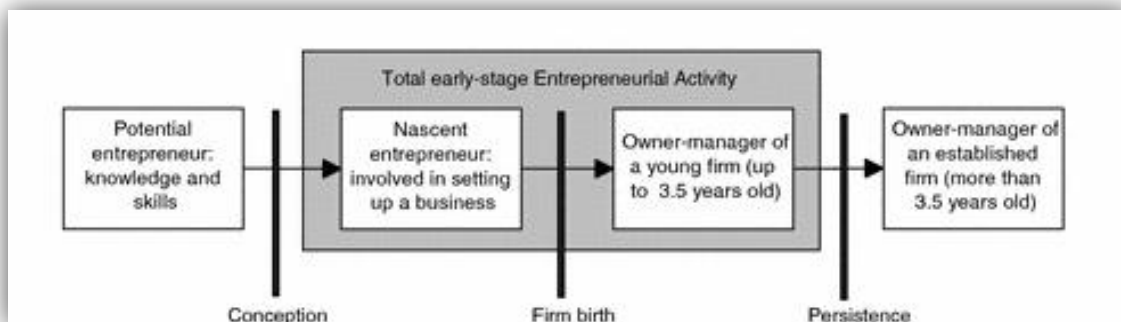
#### 2.1.1 Entrepreneurship

First, it is important to define the term entrepreneurship as there are many different interpretations used in the literature (Cunningham & Lischeron, 1991). For a summary of different definitions see Bruyat & Julien (2000). In the research community there is no widely accepted single definition of entrepreneurship (van Praag, 1999; Mahoney & Michael, 2004). Starting at the very beginning, some authors find that individuals are born as entrepreneur (Garfield, 1986; Hughes, 1986), others state that an individual decides to become an entrepreneur during life (Knight, 1921). While some literature focuses on the innovativeness (Schumpeter, 1934), others focus on the arbitrage process of an entrepreneur, bringing the demand and supply together (Knight, 1921; Kirzner, 1973). Following the reasoning of arbitrage, an entrepreneur could fulfill a more managerial role in his firm at the same time (Say, 1971). This brings the theory to the next debate, is entrepreneurship an occupational or a behavioral notion? In other words, does an entrepreneur need to own his own firm, or is being innovative and seizing opportunities at an existing firm entrepreneurship as well (Acs, 2006)? Following (empirical) literature (Bosman, Levie, & GERA, 2009; Lepoutre, Justo, Terjesen, & Bosma, 2011) entrepreneurship is defined as an occupational notion in this paper. Thus, an entrepreneur is an individual starting (or managing) a firm. Specifically, the Global Entrepreneurship Monitor (GEM) defines individuals who are entrepreneurially active as: adults in the process of setting up a business they will (partly) own and/or are currently owning and managing an operating young business. In this thesis the line of thought of the GEM will be followed for defining entrepreneurship (Reynolds, et al., 2005).



## Measuring entrepreneurship

Furthermore, based on the theoretical views on entrepreneurship, different measures for entrepreneurship are defined in the literature, focusing on different aspects of being an entrepreneur. Examples of measures of entrepreneurship could be measuring small firms (Bolton, 1971), where the focus is on the number of employees; business ownership (Reynolds, et al., 2005), when the entrepreneur is owner-manager of a firm which is more than 3, 5 years old, nascent entrepreneurship (Reynolds, et al., 2005), when the entrepreneur is starting a business, and young entrepreneurship when the entrepreneur is owner-manager of a young firm (a firm which is less than 3, 5 years old). In this thesis the 'early stage entrepreneurship' measure will be used as a measure of entrepreneurship. The early stage entrepreneurs are the individuals that are currently trying to start/starting a new business and the individuals that are the owner-manager of a young firm. This measure is also called the TEA rate, the Total early-stage Entrepreneurial Activity rate, which is currently the best known indicator for measuring entrepreneurship (Reynolds, et al., 2005). The TEA rate contains some advantages for (empirical) research as data availability and data comparability (Reynolds, et al., 2005).



**Figure 1:** Measuring entrepreneurship (Source: Reynolds et al, 2005)

### 2.1.2 Defining sustainable entrepreneurship

The first subsection framed the research field concerning the definition of entrepreneurship. In this subsection the research field will further be framed, concerning the definition of sustainable entrepreneurship.

In order to define sustainable entrepreneurship, and draw clear boundaries between the different forms of entrepreneurship, a common method is to look at the categorization of objectives. While the traditional entrepreneurship is broadly identified the same way in the literature, however this statement is not supported in all literature (Van de Ven, Sapienza, & Villanueva, 2007), the distinction of other forms of entrepreneurship is not followed in all of the existing literature. There is an ambiguous use of terminology in this field when investigating the environmental objective,

different interpretations and terminology is used as: sustainable entrepreneurship (Dean & McMullen, 2007) environmental entrepreneurship (Keogh & Polonsky, 1998), ecopreneurship (Schaper, 2002) and green entrepreneurship (Berle, 1991). Further, the term sustainable is not only used as one of the possible forms for environmental objective but as a general term for all three objectives (the triple bottom line), social, environmental and economical, as well (Parrish & Tilley, 2006). As there are many different interpretations for the term 'sustainable entrepreneurship', it is important to explain how this term is defined in this thesis.

The field of traditional entrepreneurship, in which efficiency and profits are assumed to be the main objectives of the entrepreneurs, is the best known form of entrepreneurship (Knight, 1921). Entrepreneurs exploit market opportunities by being innovative and adapting to the market (Austin, Stevenson, & Wei-Skillern, 2006). Next to traditional entrepreneurship researchers have identified some other types of entrepreneurship in the past years. Examples are serial entrepreneurs, institutional entrepreneurs, habitual entrepreneurs (Wright, Robbie, & Ennew, 1997; Li, Feng, & Jiang, 2006; Ucbasaran, Westhead, & Wright, 2006). The focus in this study is on *sustainable* entrepreneurship (Young and Tilley, 2006; Parrish, 2007) *social* entrepreneurship (Harding & Cowling, 2006) and *environmental* entrepreneurship (Thompson, Kiefer, & York, 2011). The most common method which is used for the placement of a certain entrepreneur in one of the categories is by looking at the objectives of the entrepreneur (Thompson, Kiefer, & York, 2011). As most entrepreneurs have more than one objective, focusing on the main objective gives an important direction for placement in one of the categories. The traditional entrepreneurs tend to have an economical objective, these entrepreneurs are self-interested and the profits are central. Further, the authors find that social entrepreneurs primarily focus on '*people today*' and creating social welfare, whereas sustainable entrepreneurs focus on a '*triple bottom line*' (Elkington, 1998; Daneke, Hall, & Lenox, 2010) and hence thrive to optimize the interplay between people, the planet and profit. Lastly, the entrepreneurs with an environmental objective are focused on creating economical and ecological benefits simultaneously, while using the opportunities given by the ecological degradation (Thompson, Kiefer, & York, 2011; York & Venkataraman, 2010).

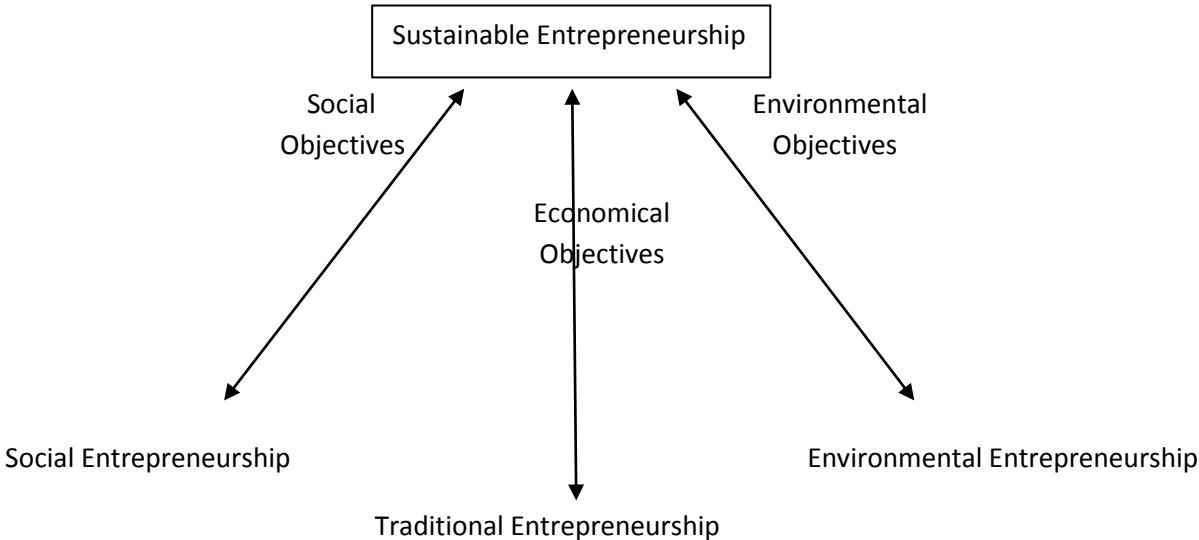
In this thesis a broad definition of sustainable entrepreneurship will be used, following Lepoutre (2011). Sustainable entrepreneurs are those who attempt to combine the environmental, economic and social components of sustainability in a *holistic* manner and are said to have a different organizing logic to more conventional entrepreneurs (Parrish & Tilley, 2006, Parrish, 2006). Sustainable entrepreneurs, thus, strive for both environmental and social objectives (Lepoutre, Justo, Terjesen, & Bosma, 2011). Furthermore, the economic objectives are also strived for, however, these

objectives are not the main objectives. Following Thompson, Kiefer and York (2011), sustainable entrepreneurs have two main objectives, looking at the people and planet, today and tomorrow. In particular, sustainable entrepreneurs use the enterprise as a tool for consolidating resources involving the ‘total overall enterprise design’ with the focus on sustainable development (Thompson, Kiefer, & York, 2011). Sustainable entrepreneurship in this view includes ‘mechanisms for enhancing environmental quality and social wellbeing embedded in core business activities’ (Parrish, 2010).

Entrepreneurs	Main objective	Objective time
Traditional	Profit	Today
Environmental	Planet, Profit	Future
Social	People	Today
Sustainable	Planet, People, Profit	Today and Future

**Table 1:** Identifying entrepreneurs and objectives

As shown in table 1, sustainable entrepreneurship focuses on entrepreneurial activity that has the potential to maintain a ‘sustainable’ society and ecosystem as well today as in the future (Thompson, Kiefer, & York, 2011). In order to achieve these goals, profits are necessary. However, profits are not an independent goal but seen together with the other two goals formulated, also known as the ‘triple bottom line’ (Daneke, Hall, & Lenox, 2010).



**Figure 2:** Sustainable entrepreneurship

First, sustaining the environment is an important objective for a sustainable entrepreneur. The environment is exploited the last decades, which led to worldwide problems as pollution (air, water),

carbon dioxide, climate change, ozone decline, industrial toxins shortages in fish and so on (Cohen & Winn, 2007). The key of this objective is to shift the basis of economic development towards a more environmentally friendly basis (Dean & McMullen, 2007). Thus, recognizing opportunities that can 'save the earth (and earn you money)' (Berle, 1991). The second objective, sustaining the society, focuses on creating social value by combining resources in new ways by stimulating social change or meeting social needs (Mair & Marti, 2006), rather than creating personal or shareholder wealth (Austin, Stevenson, & Wei-Skillern, 2006). The third objective is the economical objective. As seen above, by citing Berle (1991), earning money is also a factor of sustainable entrepreneurship: creating profits and meeting the needs of the present without compromising the ability of future generations to meet their own needs.

## 2.2 Individual level

Previous research on sustainable entrepreneurship looked at a number of different contributions of sustainable entrepreneurship to the current economy. Some research focuses on the impact on the environment and political aspects (Gibbs, 2009). Others focus on the efficiency (Young & Tilley, 2006) or the possibilities of sustainable entrepreneurship (Cohen & Winn, 2007). Further, some literature describes the positive effects of sustainable entrepreneurship on economic growth (Daneke, Hall, & Lenox, 2010) and the gains for entrepreneurs, investors and economies (Patzelt & Sheperd, 2011). However, literature discussing individual characteristics of sustainable entrepreneurs is scarce. As not all entrepreneurs are sustainable entrepreneurs, there is a variance across entrepreneurs in their ability to recognize and embrace sustainable development opportunities (Patzelt & Sheperd, 2011).

As stated above, the research on sustainable entrepreneurship could be conducted at different levels. Examples are the firm level, regional level, country level, sectoral level and the individual level. In order to find the main differences in drivers and characteristics between sustainable and traditional entrepreneurs, the individual level is the object of interest in this study. The individual characteristics of entrepreneurs compared to employees are researched extensively, as for example in the occupational choice model (Poschke, 2013). When examining the individual drivers of entrepreneurs, important determinants found in recent literature are for example: income, age, gender, experience, education, unemployment, risk and family life (Parker, 2009). When looking at the existing literature discussing the risk attitude of entrepreneurs against wage workers, entrepreneurs are found to be more willing to take risks (Gunther McGrath & MacMillan, 1992). The examples of differences between entrepreneurs and non-entrepreneurs will also be important determinants when examining differences between traditional and sustainable entrepreneurs. Furthermore, some other theories will be used in order to answer the main research question. The human capital theory will be used in order to find the accumulated implications of knowledge and

how it affects individuals who might become a traditional or sustainable entrepreneur. As the human capital theory is a theory looking at the individual characteristics of a person, as knowledge, this theory could provide some relevant information for the research. In order to provide a more complete theory to answer the main research question not only the knowledge of individuals is important, also their social network is important. The social capital theory will be used as a source to examine the differences between individuals becoming a sustainable or traditional entrepreneur in terms of their social network.

### **2.2.1 Human capital theory**

Human capital theory (Becker, 1964; 1975) uses economic logic to study the individual decisions associated with investments in productivity-enhancing skills and knowledge (as schooling, training and firm-specific knowledge investment), career choices (as the decision to work and switching employment), and other work characteristics (as wages and hours of work). This theory maintains that individuals choose an employment that maximizes the present value of economic and psychic benefits during their lifetimes. (Gimeno, Folta, Cooper, & Woo, 1997)

Furthermore, human capital theory suggests that individuals and society derive economic benefits from investments in people (Sweetland, 1996). Examples of these investments are education and experience, leading to increased knowledge of an individual. The human capital theory maintains that knowledge provides individuals with increases in their cognitive abilities, leading to more productive and efficient potential activities (Schultz, 1959; Becker, Human Capital, 1964; Mincer, 1974). Thus, if profitable opportunities for new economic activities exist, the individuals with more human capital or a higher quality of human capital should be better at perceiving and exploiting these opportunities (Davidsson & Honig, 2003). This leads to one of the assumptions of the human capital theory; more human capital is always better (Mincer, 1974). However, not all literature agrees on this statement (Davidsson & Honig, 2003). By stating that more human capital (or: knowledge) is always better, overinvestment of human capital is possible, which influences the life and career choices of individuals possibly negatively (Davidsson & Honig, 2003). However, previous knowledge provides many positive effects, it provides a basis for acquiring new knowledge and helps an individual to integrate and adapt to a new situation in a better way (Weick, 1996).

The human capital theory defines knowledge in two complementing ways; there is tacit and explicit knowledge (Polanyi, 1966). Explicit knowledge is knowledge acquired by education, formal and/or informal, to provide useful skills for individuals (employees and entrepreneurs); tacit knowledge refers to know-how. Both types of knowledge are important for individuals when solving problems and making decisions. (Sweetland, 1996)

### *Human capital theory and entrepreneurship*

When looking specifically at entrepreneurs, knowledge is important in order to run a business. Because of the importance of knowledge for entrepreneurs it is interesting to look at the question how knowledge could be increased. Using the human capital perspective, knowledge of individuals could be increased by education, for example by formal education as schooling or informal education as work experience. (Davidsson & Honig, 2003) Previous empirical research has examined the relationship between different types of knowledge and how these affect the exploitation of entrepreneurial opportunities (Weick, 1996; Honig, 1996; Davidsson & Honig, 2003). Examples of used aspects of human capital are: years of education, years of work experience and previous entrepreneurial experience (Davidsson & Honig, 2003). Education is found to have a positive relationship with entrepreneurial activity and self-employment (Parker S. , 2004; Aidis, Estrin, & Mickiewicz, 2012). Furthermore, the human capital theory has been used in empirical studies to investigate the occupational choice of individuals (Evans & Jovanovic, 1989; Evans & Leighton, 1989; Bates, 1995).

Having experience with markets and customer problems, also known as entrepreneurial knowledge, strengthens the ability of individuals to discover entrepreneurial opportunities (Shane, 2000). Thus, previous knowledge plays an important role in the intellectual performance of an individual (Davidsson & Honig, 2003). While research on sustainable entrepreneurship examining the individual drivers and characteristics of entrepreneurs is still emerging, literature on the human capital theory could help to explain this phenomena. Human capital or more specifically, previous knowledge, of an individual assists in the integration and accumulation of new knowledge and in the integration and adaptation to new situations (Weick, 1996). Furthermore, there are different types of knowledge distinguished in the human capital theory; there is tacit and explicit knowledge (Davidsson & Honig, 2003). Explicit knowledge is knowledge acquired by education, formal and/or informal, to provide useful skills for entrepreneurs; tacit knowledge refers to know-how. Both types of knowledge are very important for entrepreneurs when solving problems and making decisions. Knowledge of individuals is found to be increased by education, for example by formal education as schooling or informal education as work experience. (Davidsson & Honig, 2003)

Several studies investigated this relation between experience and entrepreneurial activity, however the results have been mixed (Davidsson, 1989). Some empirical studies found that human capital in the form of experience, for example labor market experience, management experience and previous entrepreneurial experience, are significantly positively related to entrepreneurial activity (Robinson & Sexton, 1994; Gimeno, Folta, Cooper, & Woo, 1997; Davidsson & Honig, 2003). Especially the

entrepreneurial experience is found to be positively related to entrepreneurial activity (Davidsson & Honig, 2003).

### *Human capital theory and sustainable entrepreneurship*

In this empirical research, the human capital theory will be used in order to explain differences between traditional and sustainable entrepreneurs. In this chapter recent literature concerning entrepreneurs in general is discussed above. Now we will look explicitly at sustainable entrepreneurs, concluding with the formation of the hypotheses. As this is the first paper examining the relation between the human capital theory and sustainable entrepreneurs (at the individual level), the empirical literature on this subject is scarce. However, there are some case-studies and empirical studies concerning this relationship.

Firstly, Larson (2000) found in his case-study that knowledge, in the form of experience, was crucial in order to operate a sustainable venture. Specifically, when obtaining resources and creating a secure sustainable business, knowledge and experience are crucial factors. This former experience is said to be even more important for sustainable entrepreneurs as they operate in (relatively) new markets (Larson, 2000). Furthermore, it is found that experience is a key factor for entrepreneurs in new markets (as the market for sustainability) with novel technologies or business plans (Packalen, 2007). A positive relationship is found between prior industry knowledge and performance (Cooper & Bruno, 1977; Feeser & Willard, 1990; Gimeno, Folta, Cooper, & Woo, 1997). This relation could be applicable to sustainable entrepreneurs because of the novel environment they operate in. This leads to the formation of the first hypotheses:

***Hypothesis 1:*** Human capital increases the probability of being a sustainable entrepreneur, relative to the probability of being a traditional entrepreneur.

Hypothesis 1a looks specifically at the relationship between human capital, prior entrepreneurial experience, the (self-perceived) presence of required skills, age and education, where hypothesis 1b investigates whether this relationship is stronger for sustainable entrepreneurs than for traditional entrepreneurs. As the human capital theory mostly uses knowledge as an explanatory factor, we will now discuss the social capital theory. This theory adds a further layer of analysis as it takes the social environment of an entrepreneur into account.

### 2.2.2 Social capital theory

The social capital theory has been defined in a number of ways, but refers in general to the ability of individuals to extract benefits from their social structures, such as networks and memberships (Lin, Ensel, & Vaughn, 1981; Portes, 1998). These networks of social relations are characterized by norms of trust and interaction that can improve the efficiency of society by easing coordinated actions that take place (Lehtonen, 2004). Furthermore, the social networks as extended family, community and organizational relationships are said to supplement the effect of education, experience and financial capital (Bourdieu, 1983; Coleman, 1988).

However, different views of the concept of social capital can be found in the literature. The least comprehensive view describes social capital as a set of horizontal associations between people, social networks and associated norms that have an effect on the productivity of the community (Putnam, 1993). A broader definition includes horizontal and vertical associations and includes behavior among other entities as firms as well and describes social capital as 'a variety of different entities with two elements in common: they all consist of some aspect of social structure, and they facilitate certain actions of actors, whether individuals or corporate actors, within the structure' (Coleman, 1988). Lastly, the most comprehensive view includes also the (in) formal institutions and defines social capital as 'the social and political environment that enables norms to develop and shapes social structure' (Grootaert, 1998; Woolcock, 2001). Because of the inclusion of the institutions, this definition is most popular by economists (Lehtonen, 2004).

Determinants of social capital are for example personal characteristics such as age or gender, family characteristics, experience like education, employment, attitudes and values (Lehtonen, 2004). Furthermore, there are different dimensions of social capital, the horizontal and vertical dimension. The horizontal dimension itself contains a distinction between 'bonding' and 'bridging' social capital. *Bonding* social capital refers to the more internal organizational relations, between family members and close friends. *Bridging* social capital refers to more external relations, between more distant friends, partners and colleagues. (Putnam, 1993; Adler & Kwon, 2002; Lehtonen, 2004; Estrin, Mickiewicz, & Stephan, 2013) The vertical dimension of social capital, 'linking' social capital, has the function to leverage sources, ideas and information from formal institutions beyond the community (Woolcock, 2001).

The use of the social capital theory is mainly trying to explain the differences in economic development between societies with different level of social integration. While economists agree on the fact that social capital benefits the economy, the question how these social networks positively influence the economy is a subject of debate. However, it is clear that information sharing, activity



coordination and collective decision-making are examples of beneficial functions of social capital. (Lehtonen, 2004) Besides the social capital theorists, also some critics can be found in the literature (Sobel, 2002; Dolfsma & Danreuther, 2003). But, not all of the criticism is legitimized, social capital theorists are aware of the need to distinguish sources of social capital from its outcomes (Sobel, 2002; Dolfsma & Danreuther, 2003). Furthermore, although scholars using the social capital theory often see it as a resource for economic growth and development, they do recognise that social capital is simultaneously an input to and an output of the development process (Grootaert, 1998). The fact that social capital is defined in many ways, keeping the concept vague is a problem for economists using this theory (Lehtonen, 2004).

In this thesis, social capital is interpreted as the ability of individuals to extract benefits from their social structures, such as networks and memberships (Lin, Ensel, & Vaughn, 1981; Portes, 1998). Benefits of a social structure can be seen as the provision of concrete resources, such as loans or intangible information (Davidsson & Honig, 2003). These resources provide the bonding or bridging aspect of social capital (Putnam, 1993). The ties constructed by social capital can be weak or strong. Strong ties are seen in cases where family members provide resources; weak ties are for example memberships in a certain organization. The interest in this study lies in the factors related to social relations, when facing market or hierarchically based relations (Adler & Kwon, 2002).

### *Social capital and entrepreneurship*

When looking at social capital from an entrepreneurial perspective, social capital provides networks, resources and information for the entrepreneur (Uzzi, 1999; Downing, 2005). This effect of social capital will increase the chances of entrepreneurs discovering opportunities (Davidsson & Honig, 2003). Thus, the expectation is that social capital can provide necessary resources and could be a very important factor in environments as new industries, new products, new markets and new technologies (Leff, 1979). As the focus in this study is individual characteristics and drivers of (sustainable) entrepreneurs, it is important to look at the individual indicators of the social capital theory.

Besides having knowledge through education, there are more forms of knowledge providing a good base for becoming an entrepreneur. Having connection and networks of family or friends that started a business could provide knowledge in the form of social capital for an entrepreneur. The former examples are examples of bonding social capital, which are based on strong ties for the entrepreneur. (Davidsson & Honig, 2003) When looking at the gains of social capital from an entrepreneurial perspective, social capital provides networks, resources and information for the entrepreneur (Uzzi, 1999). It is empirically found that social capital provides a basis for the financing

of a new venture (Reed & DeFillippi, 1995; Baron & Markman, 2003; Packalen, 2007). This effect of social capital will increase the chances of entrepreneurs discovering opportunities (Davidsson & Honig, 2003) and enhancing these opportunities (Aldrich & Zimmer, 1990). Individual social capital is furthermore empirically found to be positively associated with entrepreneurial discovery of opportunities (Davidsson & Honig, 2003). Empirical research found that knowing other entrepreneurs has a positive relationship with starting a new venture by a nascent entrepreneur, because the established entrepreneur could provide (relevant) information, and thus reduces uncertainty for the nascent entrepreneur (Wennekers, Thurik, van Stel, & Reynolds, 2005). Furthermore, this connection is found to reduce the costs of starting a new business for the nascent entrepreneur (Minniti, 2005).

### *Social capital and sustainable entrepreneurship*

Because of the positive relationship between individual social capital and the discovery of opportunities (Davidsson & Honig, 2003), the expectation is that social capital can provide necessary resources and could be a very important factor in environments as new industries, new products, new markets and new technologies (Leff, 1979; Shane & Venkataraman, 2000). As sustainable enterprises often are focusing on new markets (with novel technologies or business plans), it is expected that social capital will have a higher positive relationship with becoming a sustainable entrepreneur as with becoming a traditional entrepreneur (Packalen, 2007). Social capital is very important for sustainable entrepreneurs, as more information and knowledge of other persons will increase their chances of success (Reed & DeFillippi, 1995; Baron & Markman, 2003), and thus will increase the probability of an entrepreneur starting (owning) a sustainable venture against starting (owning) a traditional venture. Also, the strong ties of an individual, are found to be an important factor in order to start a sustainable venture (Meek, Pacheco, & York, 2010).

Furthermore, sustainable entrepreneurs are found to emphasize the need for social capital in their business models, because they mostly operate in new markets (Schlange, 2006). In these new markets there is no guiding experience present, which creates an important role for social capital, especially for the creation of business networks (Schlange, 2006). Furthermore, Larson (2000) found in his case-study that the formation of a network is crucial in order to operate a sustainable (innovative) venture. These networks are said to be more important for sustainable entrepreneurs than for traditional entrepreneurs, however, no empirical evidence is provided in the paper. In order to test if this statement could be empirically proven, the second hypotheses are formulated as follows:

**Hypothesis 2:** Social capital increases the probability of being a sustainable entrepreneur, relative to the probability of being a traditional entrepreneur.

## 3. Data and methodology

### 3.1 Data source and definitions

In order to conduct global research on entrepreneurship at the individual level, the most complete source of information is the Global Entrepreneurship Monitor (GEM)-database. GEM collects data yearly from a survey. Starting with a few countries only, since 1999 the data collection consists of information from more than 85 countries. Furthermore, the data consists of an assessment of entrepreneurial activity, aspirations and attitudes of the adult population in this wide range of countries. Several special topic surveys have taken place the last years and in 2009 the special topic was 'social entrepreneurship activity'. With this survey, data has been collected including the entrepreneurial objectives of individuals. In total approximately 180.000 individuals have been interviewed in 55 different countries. This data was collected with the Adult Population Survey (APS) and represents the first global and harmonized assessment of social entrepreneurship activity. One of the advantages of the GEM-dataset is that all definitions used are presented the same to all respondents in all 55 countries, making the results clear and easy to compare (Acs, Desai, & Klapper, 2008). The sample used in the empirical research contains the information of interviewed individuals in 52 countries, because of the limited number of observations in three of the countries.

The definition used for 'sustainable entrepreneurship' in this thesis is based on the answers of the respondents in the GEM Survey 2009 for the question '*please allocate a total of 100 points across the three categories, as it pertains your goal: how many points for economic value, social value and for environmental value?*'<sup>1</sup> This question defines whether an entrepreneur's orientation is more environmental, social or economical. As discussed in the theoretical framework, sustainable entrepreneurs are defined to have both environmental and social goals in particular in this thesis. Thus, this dataset matches the hypotheses formulated in the theoretical framework.

### 3.2 Variables

#### 3.2.1 Dependent variable

The dependent variable in this research is a variable which indicates whether an entrepreneur is traditional or sustainable. As described above, this information is obtained from the question about the allocation of the points for the different goals. Because of the broad definition of 'sustainable entrepreneurship' in this thesis, the points given for the social value and the points given for the environmental value will be accumulated into the category 'sustainable'. This means that the total of

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<sup>1</sup> This corresponds with question 2K, 3K and 6B15 in the survey

100 points will be spread over two categories of goals: sustainable and economical. Most respondents spread their points over both categories, as pointed out in the theoretical framework (figure 2). Thus, most respondents have as well sustainable goals as economical goals for their venture. In order to define an entrepreneur as 'traditional' or 'sustainable' a certain boundary has to be set, a minimum of points have to be given to the sustainable goals in order to be defined as a sustainable entrepreneur. A value of 70 points or higher, given by the individual, for sustainable goals will be seen as a sustainable entrepreneur, otherwise (thus for a value of 69 points and lower for sustainable goals) the individual will be categorized as a traditional entrepreneur. The value of 70 for this boundary has been selected because the value should be above 50, considering that an entrepreneur cannot be defined sustainable while the sustainable goals are minor in their business perspective, and could not be too high, considering that (some) economical goals are relevant in order to sustain a business.<sup>2</sup> For a more extensive discussion of this boundary see chapter 4.4. Furthermore, the dependent variable is a dummy variable; it will take the value 1 if an entrepreneur is categorized as a sustainable entrepreneur and the value 0 if the entrepreneur is categorized as a traditional entrepreneur.

### 3.2.2 Independent variables

In order to test the different hypotheses, four different independent variables are included in the model testing the human capital theory, and two independent variables are included in the model testing the social capital theory. In the first model, testing hypothesis 1, knowledge is found to be the main independent variable for testing the influence of human capital. In order to test for the influence of knowledge, four possible indicators are selected from the data to include in the model as explanatory variables. The first 2 variables are constructed from question 1f and question 1i of the GEM Survey. The first indicates whether an individual 'in the past 12 months has sold, shut down, discontinued or quit a business that the individual owned and managed, any form of self employment, or selling goods or services to anyone', thus this variable is containing information about existing (*recent*) prior entrepreneurial experience. If an individual recently was owner/manager of a business, this means that the individual has some prior entrepreneurial experience. From the data a binary variable is created; the entrepreneur could answer this question with YES or NO. YES meaning that there is (recent) prior entrepreneurial experience and NO meaning there is no prior entrepreneurial experience. Question 1i indicates whether an individual 'thinks he has the knowledge, skill and experience to start a new business'. Again, a binary variable is created with the data, *skills*; the entrepreneur could answer YES or NO. YES meaning that the individual thinks he has

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<sup>2</sup> In order to validate this boundary, the hypotheses will also be conducted using a value of 60 and 80 points.

the required knowledge and NO meaning that the individual does not think he has the required knowledge. Both variables will be used in order to test hypothesis 1.

As seen earlier, education is an important factor increasing experience (knowledge) of individuals. Previous research found a relationship between education, entrepreneurship and success, most studies found that education produced nonlinear effects in supporting the probability of becoming an entrepreneur, or in achieving success as an entrepreneur (Reynolds, 1997; Honig, 1996; Gimeno, Folta, Cooper, & Woo, 1997; Davidsson & Honig, 2003). Education is found to be particularly important for the female entrepreneurs when compared with the male entrepreneurs (Bates, 1995; Robinson & Sexton, 1994; Gimeno J. , Folta, Cooper, & Woo, 1997). Furthermore, an individual's prior knowledge of the environment, their motivation for personal gains and their motivation for societal gains are strengtheners of sustainable entrepreneurial activity (Patzelt & Sheperd, 2011). The variable describing the *education* level is based on the highest level of education completed. It is a categorical variable, containing 5 categories, varying from no education to being a graduate. The base category is 'no education'.

The last independent variable in the first model is *age*. This continuous variable indicates the age of an individual, ranging from 18-99. Age is also found to be an indicator of human capital, as an increase in age increases the experience of an individual (Davidsson & Honig, 2003). In order to interpret this variable more clearly, because the outcomes are very small numbers, the age will be divided by 10. Furthermore the square will be taken in order to check for non-linear relationship.

In order to test hypothesis 1 all four independent variables are included in the first model. This is possible because there are no signs found of multicollinearity between these four variables, the correlations are all found to be under 0.07.<sup>3</sup>

In order to test hypothesis 2 two different indicators for social capital will be used. The two different indicators contain information about social ties, as found to be an important factor, influencing the choice of becoming a sustainable or traditional entrepreneur, in the literature research. Question 1d and 1g from the GEM Survey will be used in order to find the influence of networks on the chance of being a sustainable entrepreneur. The first indicates whether an individual personally provided funds for a new business started by someone else in the past three years. From the data a binary variable is created, *provided capital*; the entrepreneur could answer with YES or NO. YES meaning that the individual has provided funds in the past three years. The second measure indicates whether the entrepreneur personally knows an individual who started a business in the past two years. From the

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<sup>3</sup> See the correlation matrix on page 24.

data a binary variable is created, *knowing entrepreneurs*; the entrepreneur could answer with YES or NO. YES meaning that the entrepreneur personally knows an individual that has started a business in the past two years. As the correlation of the two variables is 0.14, there is no problem of multicollinearity when including both variables.

### 3.2.3 Control variables

In all models, different control variables will be used. The relevant control variables are gender, risk attitude, entrepreneurial stage, reason entrepreneurial activity and country. These individual characteristics are included because gender, entrepreneurial stage and risk attitude are found to possibly influence the probability of being a sustainable entrepreneur compared to a traditional entrepreneur. Furthermore previous literature controls for the country the entrepreneur lives in (Estrin, Mickiewicz, & Stephan, 2013).

Previous research found that women are less likely (than men) to become either social or commercial entrepreneurs, but more likely to be social as compared to commercial entrepreneurs (Aidis, Estrin, & Mickiewicz, 2012; Estrin, Mickiewicz, & Stephan, 2013). This leads to the inclusion of the control variable *gender*. This variable is a dummy variable, taking the value 1 if the individual is male and 0 if the individual is female, and is included in order to control for differences in gender.

Second, empirical evidence is found for the statement that individuals that become entrepreneurs are more risk tolerant than non-entrepreneurs (Gunther McGrath & MacMillan, 1992). When examining the different types of entrepreneurs, sustainable entrepreneurs operate in a field where being innovative is important: creating opportunities for sustainable development, while creating economical value at the same time requires innovativeness (Cohen & Winn, 2007). Previous research found that sustainable entrepreneurs are facing more risk as they operate in a highly innovative and new market (Matos & Hall, 2007). When combining these results it could be argued that sustainable entrepreneurs are more risk-tolerant than traditional entrepreneurs. In the model, the risk attitude examines the differences in risk-appetite of entrepreneurs. In order to test for this we will look at a variable describing the *fear of failure* of an individual, using the following question: 'Fear of failure would prevent you from starting a business'. From the data a binary variable is created; the entrepreneur could answer with YES or NO. YES meaning that the individual would be prevented from starting a business because of fear of failure, while NO means that this fear of failure would not prevent the individual from starting a business.

Third, a variable containing information about the entrepreneurial stage is taken into account, *early-stage entrepreneur*. This variable is a dummy variable, indicating whether an individual is currently trying to set up a business or has a young business, or if the individual is an established entrepreneur.

The construction of this variable is based on four questions in the survey, following Reynolds et al. (2005) and Estrin et al. (2013). An individual is categorized as an early stage entrepreneur, an entrepreneur trying to start a business or having a young business, if this individual meets with the following four statements:

1. Answered the following question: 'You are, alone or with others, currently trying to start a new business, including any self-employment or selling any goods or services to others' with YES. And,
2. answered the following question: 'Over the past 12 months you have done anything to help start a new business, such as looking for equipment or a location, organizing a start-up team, working on a business plan, beginning to save money, or any other activity that would help launch a business?' with YES. And,
3. answered the following question: 'Will you personally own all, part or none of this business' with ALL or PART. And,
4. answered the following question: 'Has the new business paid any salaries, wages, or payments in kind, including your own, for more than three months?' With YES.

The first three questions indicate whether the individual is a nascent entrepreneur. The last question includes the young entrepreneurs. Thus, an early stage entrepreneur is an individual trying to start/starting a business, which he/she will partly own, or an individual owning or managing a young business. If the individual does not meet with all four statements above, the entrepreneur is not an early stage entrepreneur. As the respondents of the survey are all entrepreneurs, this individual will be categorized as an established entrepreneur, meaning that this individual is the owner or manager of an established firm.

This variable is included in the model in order to control for differences between starting or young entrepreneurs and entrepreneurs that are owner or manager of an established firm. Previous research found differences between nascent and established entrepreneurs (Davidsson & Honig, 2003; Aidis, Estrin, & Mickiewicz, 2012; Estrin, Mickiewicz, & Stephan, 2013). For nascent entrepreneurs it is found that there is a higher uncertainty (Wennekers, Thurik, van Stel, & Reynolds, 2005), and thus the entrepreneurial stage could influence the probability of being a sustainable or a traditional entrepreneur.

Fourth, a categorical variable containing information about the *reason* of entrepreneurial activity of the individual is taken into account. In order to control for significant differences in the drivers of sustainable entrepreneurial activity and traditional entrepreneurial activity, this variable is included. As found in the literature concerning occupational choice, there are many different (significant)

reasons why some individuals become entrepreneurs and others become employees (Parker, 2004; Poschke, 2013). The reason why an individual becomes an entrepreneur could also influence the allocation of entrepreneurship, whether an individual becomes a sustainable or traditional entrepreneur. In literature, some authors consider that the reason why an individual becomes an entrepreneur could play a role in the allocation of entrepreneurship (Cohen & Winn, 2007; Gibbs, 2009). In order to test for this influence of the reason, a variable is included in the model in order to control for this relationship. This variable contains 5 categories of reasons:

1. In order to take advantage of business opportunity
2. No better choices for work
3. Combination of both of the above
4. Have a job but seek better opportunities
5. Other

Furthermore *country* dummies are included in order to control for country effects. The home country of the entrepreneurs could influence the results, thus dummies for the 52 different countries are included in the model.<sup>4</sup> The reference country used is the USA, as the USA is one of the largest and well-known countries and is commonly used as a reference country in existing empirical literature.

### 3.3 Empirical approach

To investigate the research questions and test the hypotheses both descriptive and econometric analysis will be conducted. In order to explore the data, the mean and standard deviation of all the variables will be collected and shown in a summary table together with the definition of the variables. Furthermore some tests will be conducted in order to test for differences of the individual variables on the dependent variable. Lastly, a correlation matrix will be included.

In order to test the different hypotheses an econometric analysis will be conducted, containing different regressions. In this research the thinking in most hypotheses is in probabilities, thus a logistic regression will be used. A logistic regression is a type of regression analysis used for predicting the outcome of a categorical dependent variable. In case the dependent variable is a binary variable a special case of the logistic regression has to be used, namely a binary logistic regression. Binary logistic regression is a regression method used to measure the relationship

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<sup>4</sup> Countries included are: United States, South-Africa, Greece, Netherlands, Belgium, Spain, Hungary, Italy, Romania, Switzerland, United Kingdom, Denmark, Norway, Germany, Peru, Argentina, Brazil, Chile, Colombia, Malaysia, Japan, Korea, China, Iran, Morocco, Algeria, Uganda, Iceland, Finland, Latvia, Serbia, Croatia, Slovenia, Bosnia and Herzegovina, Guatemala, Panama, Venezuela, Ecuador, Uruguay, Tonga, Shenzhen, Hong Kong, Jamaica, Lebanon, Jordan, Syria, Saudi Arabia, Yemen, West Bank & Gaza Strip, United Arab Emirates, Israel.



between a categorical dependent variable and one (or more) independent variables. In a logistic regression model the dependent variable will be converted to probability scores. When the categorical dependent variable is a binary variable the problem is limited to two possible categories as outcome and could be seen as a dummy variable, it either takes the value 1 or 0. The dependent variable in this research takes the value 1, if the entrepreneur is a sustainable entrepreneur and value 0 if the entrepreneur is a traditional entrepreneur. Thus, using the binary logistic regression model, we can examine the relation between the main dependent variable, whether an individual is a sustainable entrepreneur or a traditional entrepreneur, and the different independent variables and thereby translate the effect into probabilities. Furthermore the control variables will be included in the empirical model in order to control for systematic differences.

The model used is the following:

$$(1) \quad E(Y|X) = \Pr(Y=1|X) = \beta_0 + \beta_1 a + \beta_2 b + \dots + \epsilon$$

Furthermore the (average) marginal effects will be calculated in order to interpret the results relative to the predicted probability of the being a sustainable entrepreneur. In the next chapter the results of the empirical results will be discussed.

## 4. Results

In this chapter the results of the descriptive and econometric analysis, testing the two hypotheses, will be discussed. First we will look at the descriptive results of the data, followed by the results of the empirical analysis of the hypotheses.

### 4.1 Descriptive analysis

In the dataset, a total of 25,557 entrepreneurs is taken into account in the empirical analysis. Out of this total number of entrepreneurs, 21,802 entrepreneurs are categorized as traditional entrepreneurs (meaning that the score for having social and/or environmental goals is  $<70$ ) and a total of 3,755 are categorized as sustainable entrepreneurs (meaning that the score for having social and/or environmental goals is  $\geq 70$ ). The dataset contains more traditional than sustainable entrepreneurs, which is a fair representation of the current situation (Austin, Stevenson, & Weiskillern, 2006).

As robustness check of the value of 70 or higher in order to be categorized as a sustainable entrepreneur, different boundaries were tested. A boundary of 60 points does not separate the 'real' sustainable entrepreneurs from the 'semi' sustainable entrepreneurs enough. And thus, this boundary did not show as many significant results as a boundary of 70 points, indicating that the differences between sustainable and traditional entrepreneurs are not significant for such a low boundary. Because we want to find the differences between the two groups of entrepreneurs, this boundary is not sufficient. When investigating the hypotheses with a boundary of 80 points, the sample of sustainable entrepreneurs became very small, reducing the explanatory power of the results. Thus, the boundary of 70 points is used in the (empirical) analyses.

In table A<sup>5</sup> the descriptive statistics of the dependent variable are presented. In table B<sup>6</sup> definition and descriptive statistics of the explanatory variables and control variables are summarized, following the individual responses in the survey. It can be seen from table B that there are some (small) differences between the sustainable and traditional entrepreneurs. The column containing information about the mean of the two categories of entrepreneurs shows that traditional entrepreneurs score slightly higher on *prior entrepreneurial experience* and *skills*, while sustainable entrepreneurs are older (*age*) and score slightly higher on *education*. For *provided capital*, the

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<sup>5</sup> See table A in the Appendix

<sup>6</sup> See table B in the Appendix

sustainable entrepreneurs score slightly higher, while the traditional entrepreneurs score higher for *knowing entrepreneurs*.

These differences are investigated using a bivariate empirical analysis, Pearson's Chi Square-test. The results of this test are also presented in this table, in the last column. With this test it is possible to investigate the differences in the characteristics of the two groups, the traditional and the sustainable entrepreneurs; more specifically this test investigates whether the different independent variables are significantly different for the two groups. In this test, the dependent variable consists of the values of two outcomes (1=sustainable entrepreneur, 0= traditional entrepreneur) and the null hypothesis is that the occurrence of these outcomes is statistically independent for every independent variable.

As clear in table B in the Appendix, for most independent variables, the p-scores are very small. Based on the small p-scores we can reject the null hypothesis of independence and could confirm that the different outcomes of the dependent variable are dependent on the explanatory (independent) variables. However, for the parameters for the social capital theory, *provided capital* and *knowing entrepreneurs*, the null hypothesis cannot be rejected, thus the dependence of the different outcomes between the two groups cannot be confirmed (individually) using this Pearson's Chi Square – test.

The first hypothesis, testing the influence of human capital on the probability of being a sustainable or traditional entrepreneur, could be confirmed by the bivariate analysis of all four possible indicators. The outcome of being a sustainable or traditional entrepreneur depends on all four variables individually. The answers by the respondents concerning *prior entrepreneurial experience* are significantly different at the 5 percent level, *the self-said presence of skills, age* and *education* show differences even at the one percent level. Thus, the first hypothesis can be confirmed using this bivariate analysis.

The second hypothesis, testing the influence of social capital on the probability of being a sustainable or traditional entrepreneur, could not be confirmed using the bivariate analysis. No (significant) dependent relation is found between the probability of being a sustainable or traditional entrepreneur and both indicators for social capital; the answers by the respondent concerning *provided capital* and *knowing entrepreneurs* did not differ significantly.

The relevant sample includes 3.755 sustainable entrepreneurs from 52 different countries. In table C<sup>7</sup> the frequency and percentage of sustainable entrepreneurs is shown for each country. The United

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<sup>7</sup> See table C in the Appendix

Kingdom has the largest number of sustainable entrepreneurs, while Ecuador has the smallest number of sustainable entrepreneurs. European countries show the highest number of sustainable entrepreneurs.

Furthermore, a correlation matrix is included in order to test for possible multicollinearity problems in the data. In the table below, it is clear that there are no problems of multicollinearity between the different variables, as the highest correlation is -0.221. Thus all variables can be included jointly in the regression analysis.

**Table 2: Correlation matrix**

Variable	1	2	3	4	5	6	7	8	9	10	11
<b>1. Sustainable entrepreneur</b>	1.000										
<b>2. Prior entrepreneurial experience</b>	-0.015*	1.000									
<b>3. Skills</b>	-0.023*	0.054*	1.000								
<b>4. Age/10<sup>2</sup></b>	0.040*	-0.053*	-0.010	1.000							
<b>5. Education</b>	0.084*	-0.033*	0.068*	-0.036*	1.000						
<b>6. Provided capital</b>	0.007	0.162*	0.051*	-0.034*	0.029*	1.000					
<b>7. Knowing entrepreneurs</b>	-0.010	0.087*	0.113*	-0.164*	0.078*	0.139*	1.000				
<b>8. Gender</b>	0.039*	-0.009	-0.070*	-0.032*	-0.039*	-0.048*	-0.074*	1.000			
<b>9. Fear of failure</b>	-0.011	-0.004	-0.146*	-0.021*	-0.043*	-0.010	-0.030*	0.060*	1.000		
<b>10. Early stage entrepreneur</b>	-0.009	0.113*	0.070*	-0.221*	0.091*	0.100*	0.150*	-0.007	-0.023*	1.000	
<b>11. Reason</b>	0.017*	-0.014*	-0.012	0.060*	0.004	-0.023	-0.041*	0.006	0.030*	-0.018*	1.000

Note: Pearson correlation coefficients based on the entire model, i.e. model 4. \* p<0.05

Source: GEM Survey 2009: 'social entrepreneurship'

## 4.2 Empirical analysis Logit

In this chapter the results of the multivariate empirical analyses will be discussed. The table below, table 3, shows the average marginal effects that have been derived from the four logit models, introduced in the previous section, with *sustainable entrepreneur* as dependent variable. In the first model, the average marginal effects are conducted including just the control variables in the model. By testing a model with just the control variables it is possible to see the difference in explanatory power of the model by including the independent variables, in order to test if the independent variables (significantly) influence the outcome of the dependent variable. For all three following models the pseudo R2 is higher than for the first model, indicating that the explanatory variables increase the explanatory power of the model, and thus are variables of interest. In model 2 the marginal effects are conducted when investigating hypothesis 1, the influence of the human capital theory on being a traditional or sustainable entrepreneur. In model 3, hypothesis 2 is tested using

the indicators of the social capital theory as explanatory variables. In model 4 the entire model is tested in order to answer the main research question.

The predicted probability of being a sustainable entrepreneur is approximately 0.13 in all models, or 13 percent. Since all four models have quite similar numbers of observations and the share of sustainable entrepreneurs is equal in each model, the predicted probability of being a sustainable entrepreneur does not differ a lot between the models.

**Table 3: Average marginal effects from logistic regression with sustainable entrepreneur as dependent variable**

	Model 1	Model 2	Model 3	Model 4
Predicted probability: Sustainable entrepreneur	0.13	0.13	0.13	0.13
Prior entrepreneurial experience		-0.0158** (0.0075)		-0.0175** (0.0075)
Skills		-0.0127** (0.0069)		-0.0133** (0.0070)
Age/10 <sup>2</sup>		0.0039*** (0.0012)		0.0039*** (0.0012)
Age/10		-0.0310*** (0.0103)		-0.0311*** (0.0104)
Education: Some secondary		0.0136 (0.0090)		0.0133 (0.0091)
Education: Secondary degree		0.0194** (0.0086)		0.0186** (0.0087)
Education: Post secondary		0.0276*** (0.0089)		0.0265*** (0.0090)
Education: Graduate		0.0491*** (0.0155)		0.0481*** (0.0156)
Povided capital			0.0125 (0.0078)	0.0148* (0.0081)
Knowing entrepreneurs			-0.0071 (0.0047)	-0.0056 (0.0049)
Gender	0.0225*** (0.0047)	0.0213*** (0.0048)	0.0231*** (0.0047)	0.0219*** (0.0049)
Fear of failure	-0.0018 (0.0051)	0.0014 (0.0052)	-0.0022 (0.0051)	0.0009 (0.0053)
Early stage entrepreneur	0.0392*** (0.0052)	0.0428*** (0.0056)	0.0400*** (0.0054)	0.0432*** (0.0056)
Reason: Take advantage of business opportunity	-0.0598*** (0.0081)	-0.0600*** (0.0083)	-0.0594*** (0.0082)	-0.0599*** (0.0083)
Reason: No better choices for work	-0.0410*** (0.0087)	-0.0395*** (0.0089)	-0.0414*** (0.0088)	-0.0401*** (0.0090)

**Table 3 continued**

Reason: Combination of both above	-0.0660*** (0.0100)	-0.0602*** (0.0101)	-0.0662*** (0.0101)	-0.0607*** (0.0102)
Reason: Have a job but seek better opportunities	-0.0709*** (0.0127)	-0.0723*** (0.0123)	-0.0712*** (0.0129)	-0.0730*** (0.0131)
Observations	22,881	21,953	22,535	21,654
Pseudo R2	0.0628	0.0657	0.0633	0.0661

*Note:* Reference category for **education** is 'no education'. Reference category for **reason** is: 'other'. Country dummies included (52). Standard errors in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

*Source:* GEM Survey 2009: 'social entrepreneurship'

#### 4.2.1 Results concerning human capital

In the second model hypothesis 1 is tested, stating that there is a positive relationship between human capital and owning a sustainable venture. This hypothesis can be confirmed partly by the second model. For the first two indicators, *prior entrepreneurial experience* and *the self-said presence of skills*, a significant (at the 5 percent level) negative relationship is found concerning the probability of being a sustainable entrepreneur. Since average marginal effects are shown, the coefficient can be interpreted as well. On average, entrepreneurs that have (recent) *prior entrepreneurial experience* will have a 1.58 percentage point lower predicted probability of being a sustainable entrepreneur, ceteris paribus. However, the predicted probability of the model for being a sustainable entrepreneur is 13 percent. In total the predicted probability of being a sustainable entrepreneur, when having (recent) prior experience decreases to 11.42 percent. *The self-said presence of skills*, decreases the probability of being a sustainable entrepreneur, on average and ceteris paribus, by 1.27 percentage point, which implies a total predicted probability of 11.73 percent.

For the indicator age, a significant (at the one percent level) positive-shaped relationship is found. Both variables were included because of potential non-linearity. The negative influence of age/10 shows that if the individuals are older it is less likely that these individuals are sustainable entrepreneurs, the positive influence of age/10<sup>2</sup> shows that there is a U-shape of this age effect. The age found at the lowest point of the U-shape is 39.47 years<sup>8</sup>. This means that the effect of age decreases the probability of being a sustainable entrepreneur until an individual is approximately 39 years old, after this age the probability of being a sustainable entrepreneur will increase. As the average age of the sample is 41 years, the lowest point of the U-shape is at an average age. This means that part of the sample experiences the negative effect of age, while the other part of the sample experiences the positive effect of age.

Lastly, for the indicator education, a(n) (in)significant positive relationship is found. The effect of an increase in education significantly increases the probability of being a sustainable entrepreneur. For

<sup>8</sup> The relevant calculation is:  $(-(-0.0310) / (2 * 0.0039)) * 10 = 39.47$

some secondary education, a positive insignificant effect is found. This implies that there are no significant differences between entrepreneurs with no education or some secondary education on the probability of being a sustainable entrepreneur. Individuals with a secondary degree or higher have a significant higher probability of being a sustainable entrepreneur, compared to individuals with no education. This means that the positive effect of education on the probability of being a sustainable entrepreneur only exists for the higher categories of education. Being a graduate (relative to having no education) increases the predicted probability of being a sustainable entrepreneur, on average, by 4.91 percentage points to 17.91 percent, *ceteris paribus*. Furthermore, we can see from table 3 that the size of the effect of education increases with the level of education. This means that the higher the level of education, the larger the positive effect on the probability of being a sustainable entrepreneur. Thus higher levels of education increase the probability of being a sustainable entrepreneur, *ceteris paribus* and compared to having no education.

The number of observations is lower in this model, due to limited data availability for some of the variables. The R<sup>2</sup> of this model is higher than the R<sup>2</sup> of the first model with just the control variables, indicating that the explanatory power of the model increased with the inclusion of the independent variables. Lastly, it is notable that *education* showed an overall positive influence on the predicted probability of being a sustainable entrepreneur. However, *(recent) prior entrepreneurial experience* and *self-perceived presence of skills* showed a negative (individual) effect on being a sustainable entrepreneur. For *age*, a non linear U-shaped effect has been found. Thus, significant differences are found between sustainable and traditional entrepreneurs using the indicators for the human capital theory. However, the sign of most of the indicators is opposite to the expected sign.

#### **4.2.2 Results concerning social capital**

Model 3 in table 3 shows the results concerning hypothesis 2. This hypothesis cannot be confirmed using this model, as an insignificant positive relationship between *provided capital* and the probability of being a sustainable entrepreneur is found. This means that no significant differences have been found between sustainable and traditional entrepreneurs in terms of providing capital. Sustainable and traditional entrepreneurs both could have provided capital for others in the past three years, there is no significant difference between the two groups. Furthermore, an insignificant negative relationship has been found between *knowing entrepreneurs* and the probability of being a sustainable entrepreneur. Again, no significant differences have been found concerning the network of the entrepreneur with other entrepreneurs (that started a business in the past two years). Bonding and bridging social capital thus does not significantly increase (change) the probability of being a sustainable entrepreneur, as expected. These results will be elaborated further in the discussion.

### 4.2.3 Results complete model

The fourth model combines all models and investigates the role of human capital and social capital on being a sustainable entrepreneur, while including the control variables. The coefficients for *prior entrepreneurial experience*, *skills* and *age/10* were slightly larger than in model 2, the coefficients for *age/10<sup>2</sup>* and *education* are slightly lower. This is caused by the inclusion of the social capital indicators in the fourth model. These variables partly explain some of the variance that first was explained by the human capital variables, as the coefficient for the social capital indicators increased. The sign and significance of the variables concerning human capital are similar to the sign and significance found in the second model. A significant negative relationship between (recent) *prior entrepreneurial experience* and being a sustainable entrepreneur, a significant negative relationship between *self-perceived presence of skills* and being a sustainable entrepreneur, a significant U-shaped relationship between *age* and being a sustainable entrepreneur and lastly a positive (in)significant relationship between *education* and being a sustainable entrepreneur. When an individual has more knowledge based on a higher level of education, the probability of being a sustainable entrepreneur increases, as found in the literature. However, an increase in (recent) *prior entrepreneurial experience* or *skills* does decrease the probability of being a sustainable entrepreneur. This implicates that individuals that have been owner/manager of a business before, are more likely to be a traditional entrepreneur relative to being a sustainable entrepreneur. As well as individuals that think they have the knowledge, skill and experience required to start a new business, these more confident individuals are more likely to be a traditional entrepreneur relative to being a sustainable entrepreneur. These findings will be elaborated further in the discussion in chapter 5.

The indicators for social capital have changed slightly. The coefficient of the variable *provided capital* increased in coefficient and is significant (at the ten percent level) in the total model. Thus if the entrepreneur provided capital for someone else in the past three years, this increases the probability of being a sustainable entrepreneur. The variable *knowing entrepreneurs* increased in coefficient, but still is found to be insignificant in the total model. Again, no significant differences have been found between sustainable entrepreneurs and traditional entrepreneurs when investigating their networks.

Furthermore, all of the control variables are found to be of significant influence at the one percent level in all models, except for fear of failure, which does not show to be significantly different for sustainable and traditional entrepreneurs in all models. This factor will influence both the groups the same way.



In the total model, i.e. model 4, being male significantly increases the probability of being a sustainable entrepreneur, on average, by 2.19 percentage point, to 15.19 percent, *ceteris paribus*; this is in line with previous research (Davidsson & Honig, 2003; Estrin, Mickiewicz, & Stephan, 2013).

Being an early stage entrepreneur increases the probability of being a sustainable entrepreneur, on average, by 4.32 percentage points, which implies a total predicted probability to 17.32 percent, *ceteris paribus*. ;Finally, the four different reasons for being an entrepreneur given in the survey are all of significant negative influence on the predicted probability of being a sustainable entrepreneur, relative to the reference category: no reason. For example, if the respondent answered 'no better choices for work' this decreases the probability of being a sustainable entrepreneur, on average, by 4.01 percentage points, compared to the reference category 'other reasons'. This implies a total predicted probability of 8.99 percent, *ceteris paribus*. This finding is interesting, as all four 'standard' reasons used in the survey, do not include the right reason explaining why sustainable entrepreneurs start a venture. This will be discussed further in chapter 5.

When looking at the explanatory power of this total model, it is the highest of all four models, and improved most compared to the base model with just the control variables, indicating that the inclusion of the indicators for both the human capital theory and the social capital theory explains the data best.

Lastly, the results of the logistic regression (i.e. Logit model) for each country are presented in table D<sup>9</sup>. Most countries show a significant positive or negative effect on being a sustainable entrepreneur in all models relative to the reference country, USA. The countries, with a negative effect, relative to the USA, that did not show significant results are Israel, Uganda (model 2 and 4), Chile (model 2 and 4), Algeria, Italy, Colombia (model 2 and 4), Morocco and China (model 2, 3 and 4). A possible explanation for the insignificance of some of these results is that the number of sustainable entrepreneurs was small in these countries.<sup>10</sup> However, Chile and Uganda did have a large number of sustainable entrepreneurs, indicating that living in these countries does not significantly influence the probability of being a sustainable entrepreneur. We can interpret these country-results as follows: when an entrepreneur lives in Lebanon the predicted probability of being a sustainable entrepreneur decreases, on average, by 12.44 percentage points, compared to an entrepreneur living in the USA, to 0.56 percent, *ceteris paribus*.

Furthermore, we see that in particular entrepreneurs from African countries, Central and South American countries and East European countries, have a lower probability of being a sustainable

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<sup>9</sup> See table D in the Appendix

<sup>10</sup> See table C in the Appendix

entrepreneur compared to the reference country USA. From these results we can see that the development level of a certain country could play a role in the allocation of entrepreneurship in that country, as most of these (parts of) continents are less developed as for example the Western European countries. This will be discussed further in chapter 5.

Some other countries showed a positive effect compared to the reference country USA. Again, some results were not significant, Jamaica (model 1 and 3), Finland (model 1 and 3), Dominican Republic (model 1 and 3), Argentina (model 1 and 3), Korea (model 4), Iran, United Arab Emirates, Syria, Shenzhen, Latvia (model 1, 2 and 3) and Romania. It is notable that living in South Africa increases the probability of being a sustainable entrepreneur, on average, by 14.07 percentage points, compared to an entrepreneur living in the USA, to 27.07 percent, *ceteris paribus*. While living in other African countries decreases this probability, living in South Africa increases the probability of being a sustainable entrepreneur. Most countries that show a positive effect compared to the USA, are developed countries in (Western) Europe and Asia. This indicates again that level of development of a certain country influences the probability of being a sustainable entrepreneur.

Furthermore, the regression analysis was conducted while using dummies for the four continents (Europe, America, Asia & Oceania and Africa). The results changed drastically, indicating that further research on this subject could be interesting.

### 4.3 Interaction effects

Table 4 presents the average marginal effects from the Logit analysis with sustainable entrepreneur as dependent variable and various interaction terms. These interaction terms have been estimated based on the full model presented in table 3. The first interaction term included in the model is *skills x education*. While the variable *skills* does not show a significant influence on the probability of being a sustainable entrepreneur on its own, it could influence this probability as an interaction effect. If an individual answered confirmative on the question regarding the *self-perceived presence of skills*, this indicates that the individual is confident. The effect of the self perceived skills could decrease the probability of being a sustainable entrepreneur when combined with *education*. The data show that the higher educated individuals answered the question about their skills more often with YES and thus are more confident. When testing for this relationship with an ANOVA test, the significance (at the one percent level) of the relationship was confirmed. Thus, this interaction effect was tested in the total model, i.e. model 4. However, the interaction effect had no significant influence on the probability of being a sustainable entrepreneur, as can be seen from the results shown in table 4.

Furthermore, an interaction effect could exist between an indicator for human capital and an indicator for social capital, namely; (recent) *prior entrepreneurial experience* and *knowing*

*entrepreneurs* could influence the probability of being a sustainable entrepreneur as an interaction effect. If an individual has prior entrepreneurial experience, this indicates that the individual has been an entrepreneur before (in the past twelve months). This increases the likelihood that the individual has had contact with other entrepreneurs and thus knows other entrepreneurs, as the individual was active in entrepreneurial activities before. Knowing entrepreneurs (that started in the past two years) thus could depend on having (recent) prior entrepreneurial experience. Most entrepreneurs that know other entrepreneurs have prior entrepreneurial experience (72.54 percent against 27.46 percent). However, the ANOVA test and the results in table 4 show that there is no significant interaction effect of prior entrepreneurial knowledge and knowing entrepreneurs.

Lastly, an interaction effect is possible between gender and education. In many countries, men are still higher educated than woman. The percentage of women without education is 14 percent, against 10 percent of the men without education. Furthermore, the men score higher on the three highest levels of education (secondary degree, post secondary, graduate). Thus the gender of an individual could influence the education level, and influence the probability of being a sustainable entrepreneur as an interaction effect. When testing for this relationship with an ANOVA test, the significance (at the one percent level) of the relationship was confirmed. Thus, this interaction effect was tested in the total model, i.e. model 4. The results show a significant interaction effect for the category of education ‘some secondary’. The other three categories do not show a significant interaction effect. Notable is that the category ‘some education’ is not significant in the Logit models. However, for the lower category of education an interaction effect is found with gender. This interaction effect decreases the probability of being a sustainable entrepreneur.

**Table 4: Average marginal effects from logit regression with interaction effects**

	Model 4	Model 4	Model 4
Predicted probability: Sustainable entrepreneur	0.13	0.13	0.13
Prior entrepreneurial experience	-0.1742** (0.0075)	-0.0186 (0.0136)	-0.0166** (0.0075)
Skills	-0.0020 (0.0124)	-0.0133* (0.0070)	-0.0131* (0.0070)
Age/10 <sup>2</sup>	0.0038*** (0.0012)	0.0039*** (0.0012)	0.0038*** (0.0012)
Age/10	-0.0309*** (0.0104)	-0.0312*** (0.0104)	-0.0300*** (0.0104)
Education: Some secondary	0.0130 (0.0085)	0.0133 (0.0091)	0.0137 (0.0091)
Education: Secondary degree	0.0288** (0.0126)	0.0186** (0.0091)	0.0180** (0.0087)
Education: Post secondary	0.0386*** (0.0139)	0.0265*** (0.0090)	0.0267*** (0.0090)

**Table 4 continued**

Education: Graduate	0.0663*** (0.0232)	0.0481*** (0.0156)	0.0492*** (0.0157)
Provided capital	0.0148* (0.0081)	0.0148* (0.0081)	0.0155* (0.0080)
Knowing entrepreneurs	-0.0053 (0.0049)	-0.0058 (0.0050)	-0.0054 (0.0049)
Gender	0.0220*** (0.0048)	0.0219*** (0.0048)	0.0200*** (0.0048)
Fear of failure	0.0012 (0.0053)	0.0009 (0.0052)	0.0020 (0.0052)
Early stage entrepreneur	0.0433*** (0.0056)	0.0432*** (0.0056)	0.0440*** (0.0056)
Reason: Take advantage of business opportunity	-0.0597*** (0.0083)	-0.0599*** (0.0083)	-0.0590*** (0.0083)
Reason: No better choices for work	-0.0396*** (0.0090)	-0.0401*** (0.0090)	-0.0402*** (0.0090)
Reason: Combination of both above	-0.0599*** (0.0102)	-0.0607*** (0.0102)	-0.0600*** (0.0102)
Reason: Have a job but seek better opportunities	-0.0718*** (0.0131)	-0.0730*** (0.0131)	-0.0722*** (0.0131)
Interaction: skills x education: some secondary	0.0157 (0.0217)		
Interaction: skills x education: secondary degree	0.0040 (0.0197)		
Interaction: skills x education: post secondary	-0.0155 (0.0200)		
Interaction: skills x education: graduate	0.0189 (0.0414)		
Interaction: prior entrepreneurial experience x knowing entrepreneurs		-0.0017 (0.0177)	
Interaction: gender x education: some secondary			-0.0348** (0.01756)
Interaction: gender x education: secondary degree			0.0012 (0.0156)
Interaction: gender x education: post secondary			0.0101 (0.0155)
Interaction: gender x education: graduate			0.00007 (0.0247)
Observations	21654	21654	21564
R-squared	0.0663	0.0661	0.0668

*Note:* Reference category for **education** is 'no education'. Reference category for **reason** is: 'other'. Country dummies included (52). Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

*Source:* GEM Survey 2009: 'Social entrepreneurship'

### 4.3 Empirical analysis OLS

As a robustness check for the results found in the previous Logit model, also an Ordinary Least Squares regression is conducted. In this model the dependent variable is a continuous variable containing the scores for sustainable objectives (environmental + social goals).<sup>11</sup> The independent variables and the control variables are similar to the variables in the logistic regression. Again, four models are shown in the table, table 5, below. Most of the signs and the significance levels are similar to the results of the logistic regression. Regarding the human capital indicators, (recent) *prior entrepreneurial experience*, still shows a negative sign, however it is not significant anymore in model 2. In model 4 this variable is still significant at the 5 percent level. This could be due to the fact that the mean of this variable is smaller than the standard deviation, which could lead to overdispersion. The variable *self-perceived presence of skills* became insignificant in both models. *Age* shows the same results as in the Logit regression, as well as *education*, while education became for the first 2 categories even more significant.

**Table 5: Results OLS regression with sustainable entrepreneur as dependent variable**

	Model 1	Model 2	Model 3	Model 4
Prior entrepreneurial experience		-0.677 (0.569)		-1.147** (0.577)
Skills		-0.546 (0.475)		-0.691 (0.483)
Age/10 <sup>2</sup>		0.329*** (0.092)		0.324*** (0.0170)
Age/10		-2.878*** (0.790)		-2.816*** (0.798)
Education: Some secondary		1.671*** (0.640)		1.705*** (0.646)
Education: Secondary degree		1.875*** (0.621)		1.769*** (0.626)
Education: Post secondary		3.093*** (0.652)		2.911*** (0.658)
Education: Graduate		4.734*** (1.175)		4.546*** (1.180)
Provided capital			2.973*** (0.563)	3.017*** (0.579)
Knowing entrepreneurs			0.438 (0.340)	0.423 (0.352)
Gender	1.794*** (0.336)	1.838*** (0.344)	1.967*** (0.340)	1.987*** (0.348)
Fear of failure	-0.936*** (0.362)	-0.830** (0.372)	-0.949*** (0.365)	-0.850** (0.375)

<sup>11</sup> See table E in the Appendix

**Table 5 continued**

Early stage entrepreneur	5.723*** (0.369)	5.638*** (0.389)	5.491*** (0.377)	5.465*** (0.394)
Reason: Take advantage of business opportunity	-5.795*** (0.760)	-5.910*** (0.775)	-5.807*** (0.767)	-5.916*** (0.781)
Reason: No better choices for work	-6.399*** (0.798)	-6.204*** (0.814)	-6.347*** (0.805)	-6.169*** (0.821)
Reason: Combination of both above	-6.630*** (0.857)	-6.409*** (0.875)	-6.644*** (0.865)	-6.429*** (0.884)
Reason: Have a job but seek better opportunities	-4.535*** (0.952)	-4.511*** (0.968)	-4.640*** (0.959)	-4.584*** (0.975)
Constant	14.03*** -2.263	16.98*** -3.036	13.37*** -2.351	16.24*** -2.665
Observations	22,881	21,953	22,535	21,654
R-squared	0.158	0.161	0.159	0.162

Note: Reference category for *education* is 'no education'. Reference category for *reason* is: 'other'. Country dummies included (52). Robust standard errors in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

Source: GEM Survey 2009: 'social entrepreneurship'

Regarding the indicators for social capital, the sign of *knowing entrepreneurs* changed, however the results are still insignificant. Indicating that knowing entrepreneurs does not influence the probability of being a sustainable entrepreneur significantly. The sign of *provided capital* did not change compared to the results in the Logit model. In the third and fourth model this variable became significant (at the one percent level).

The sign and significance of the control variables is the same as in the Logit models. All control variables, except for fail of failure are of significant influence at the one percent level.

The R2 of the OLS models is higher than the models of the logistic regression. This shows that the OLS models explain the variance in the data better than the Logit models. Most of the results did not show major differences, however, (*recent*) *prior entrepreneurial experience* became less significant (or lost significant influence) while *provided capital* became more significant in the OLS models.

#### 4.4 Model concerning highly sustainable and highly traditional entrepreneurs

As robustness check for the boundary of 70 points, in order to define an entrepreneur as a sustainable entrepreneur, a second Logit model was conducted. In this analysis the four models are conducted, while including a different dependent variable. In order to test if the results are similar in a model using a more extreme difference between sustainable and traditional entrepreneurs; in this model the dependent variable is based on the entrepreneurs that scored (very) high ( $\geq 70$  sustainable goals) on sustainable goals against the entrepreneurs that scored (very) high on economical goals

( $\geq 70$  economical goals). Because of this dependent variable, the number of observations decreased, as not all entrepreneurs in the first Logit model meet these definitions. A dummy was created as dependent variable, taking the value 1 if an individual is a highly sustainable entrepreneur while taking the value 0 if the entrepreneur is a highly traditional entrepreneur, see table F in the Appendix. In the table below, table 6, the results of this analysis are shown.

**Table 6: Average marginal effects from logistic regression with highly sustainable entrepreneur as dependent variable**

	Model 1	Model 2	Model 3	Model 4
Predicted probability: Highly sustainable entrepreneur	0.22	0.22	0.22	0.22
Prior entrepreneurial experience		-0.0246** (0.0112)		-0.0272** (0.0113)
Skills		-0.0200** (0.0101)		-0.0211** (0.0102)
Age/10 <sup>2</sup>		0.0074*** (0.0017)		0.0073*** (0.0018)
Age/10		-0.0645*** (0.0154)		-0.0643*** (0.0156)
Education: Some secondary		0.0284** (0.0132)		0.0281** (0.0134)
Education: Secondary degree		0.0270** (0.0127)		0.0252** (0.0128)
Education: Post secondary		0.0369*** (0.0130)		0.0346*** (0.0132)
Education: Graduate		0.0815*** (0.0233)		0.0788*** (0.0234)
Provided capital			0.0201* (0.0117)	0.0223* (0.0120)
Knowing entrepreneurs			-0.0074 (0.0069)	-0.0060 (0.0072)
Gender	0.0342*** (0.0069)	0.0320*** (0.0070)	0.0353*** (0.0070)	0.0330*** (0.0071)
Fear of failure	0.0017 (0.0075)	0.0042 (0.0077)	-0.0005 (0.0075)	0.0034 (0.0077)
Early stage entrepreneur	0.0586*** (0.0077)	0.0620*** (0.0081)	0.0594*** (0.0078)	0.0622*** (0.0082)
Reason: Take advantage of business opportunity	-0.0859*** (0.0124)	-0.0885*** (0.0126)	-0.0845*** (0.0125)	-0.0875*** (0.0127)
Reason: No better choices for work	-0.0687*** (0.0132)	-0.0672*** (0.0134)	-0.6894*** (0.0133)	-0.0678*** (0.0135)
Reason: Combination of both above	-0.0935*** (0.0150)	-0.0893*** (0.0152)	-0.0937*** (0.0151)	-0.0899*** (0.0153)

**Table 6 continued**

Reason: Have a job but seek better opportunities	-0.0939*** (0.0189)	-0.0957*** (0.0193)	-0.0952*** (0.0191)	-0.0964*** (0.0195)
Observations	14,030	13,450	13,808	13,268
Pseudo R2	0.1057	0.1100	0.1060	0.1101

*Note:* Reference category for **education** is 'no education'. Reference category for **reason** is: 'other'. Country dummies included (52). Standard errors in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

*Source:* GEM Survey 2009: 'social entrepreneurship'

The predicted probability of being a highly sustainable entrepreneur of 0.22 or 22 percent is again the same in all four models, as the number of observations is quite similar in the models and the share of sustainable entrepreneurs is equal in each model. It is clear that the predicted probability increased from 13 percent to 22 percent in the model with the highly sustainable and highly traditional entrepreneurs. In this model the size of the differences between sustainable and traditional entrepreneurs increased, as the size of the effects of all variables became slightly larger.

Concerning the human capital theory, hypothesis 1, we can see in model 2 that the sign and significance of (recent) *prior entrepreneurial experience*, *skills* and *age* did not change compared to the model shown in table 3. Prior entrepreneurial experience and skills show a (larger) negative effect on being a sustainable entrepreneur. For age, again, the U-shaped relation is found. For *education*, all levels of education significantly increase the probability of being a sustainable entrepreneur compared to having no education. Having some secondary education now increases the probability of being a sustainable entrepreneur, on average, by 2.84 percentage points, compared to having no education. Which implies a total predicted probability of 24.84 percent, ceteris paribus. Hypothesis 1, again, is only partly confirmed. However, significant differences between sustainable and traditional entrepreneurs have been found.

Concerning the social capital theory, hypothesis 2, we can see that the variable *provided capital* is still positive and became significant (at the ten percent level) in this model. *Knowing entrepreneurs* is still insignificantly negative. Hypothesis 2 is partly confirmed in this second Logit model, as provided capital significantly increases the probability of being a sustainable entrepreneur, compared to not provided capital, on average, by 2.01 percentage points, to 24.01 percent, ceteris paribus.

In the total model the sign and significance of all explanatory variables is similar to the sign and significance of these variables in the second and third model. Furthermore, all control variables, except for fear of failure, significantly influence the probability of being a sustainable entrepreneur. Fear of failure is in none of the models significant, and has a negative sign in the third model, while the sign is positive in the other models. Furthermore, being male and being an early stage



entrepreneur increases the probability of being a sustainable entrepreneur. While the four different reasons, compared to 'other reason' decrease the probability of being a sustainable entrepreneur.

The R2 of these Logit models with the highly sustainable and highly traditional entrepreneurs as dependent variable increased compared to the first Logit model. This implies that this 'extreme' model explains the data best. Most results remain the same, indicating that the boundary of 70 points is the right boundary in order to investigate differences between sustainable and traditional entrepreneurs.

## 5. Discussion and limitations

In this chapter the results of the empirical analyses will be discussed in the first section and the limitations of the research will be pointed out in the second section.

### 5.1 Discussion

The results of the bivariate analysis showed that most explanatory variables independently influence the probability of being a sustainable or traditional entrepreneur. The significant influence of all four indicators for the human capital theory was confirmed. The influence of the two indicators for the social capital theory, however, could not be confirmed by the bivariate analysis. In order to test the relationship between the dependent and the explanatory variables further, a multivariate regression was conducted.

The multivariate empirical analysis (Logit) showed some expected and some less expected results. Significant differences were found between the different explanatory variables and the probability of being a sustainable entrepreneur. Hypothesis 1, concerning the human capital theory, is partly confirmed as *education* did show a significant increase of the probability of being a sustainable entrepreneur and the effect became larger and more significant as the level of education increased, compared to having no education. Also, an interaction effect was found between gender and the lower category of education, some secondary, proving that these variables influence the probability of being a sustainable entrepreneur as an interaction. However, the other indicators for human capital, *prior entrepreneurial experience* and *self-perceived presence of skills* showed a significant decrease in the probability of being a sustainable entrepreneur. A possible explanation is that individuals with prior entrepreneurial experience probably have failed in this prior entrepreneurial experience, because they had to shut down, discontinue or quit their business. This failure could make it more likely for the entrepreneurs to start a new business that is less complicated than a sustainable venture, as sustainable entrepreneurs have to focus on a triple bottom line, and traditional entrepreneurs focus mostly just on the economical goals. If these entrepreneurs had to quit their business because of failure and they want to start a new business again, it is logical to choose just one goal. As economical gains are necessary in order to sustain a business, (failed) prior entrepreneurial experience could increase the chance of being a traditional entrepreneur, and just pursuing economical goals. 35 percent of the entrepreneurs with prior entrepreneurial experience

had to sell the business because their business was not profitable and 18 percent had to sell because of problems with financing, which confirms the line of reasoning above.<sup>12</sup>

The opposite sign found for the *self-perceived presence of skills*, is more difficult to explain. If the individual answered confirmative on the question regarding the *self-perceived presence of skills*, this indicates that the individual is confident. One possibility of the opposite effect of the self perceived skills is that this indicator could decrease the probability of being a sustainable entrepreneur when combined with education, as an interaction effect, however this relationship was not proven. Furthermore, it is possible that highly confident individuals, that mostly are highly educated as well in the data, could earn significant wages and thus want strive for more economical goals in order to achieve this significant income with their own business. When looking at the reason why the respondents become an entrepreneur, this line of thought is partly confirmed. Most individuals that think they have the skills to become an entrepreneur want to take advantage of a business opportunity. Taking advantage of a business opportunity could indicate that the individuals want to use this business opportunity in order to increase their gains. However, a business opportunity does not mean economical gains alone, thus further research should investigate this negative relationship between self-perceived skills and being a sustainable entrepreneur deeper. For example by including more variables, as policy, culture and wealth, and data should be included from more than one (year of) survey.

Furthermore, *age* showed an U-shaped effect as  $age/10$  was negative and  $age/10^2$  was found to be positive. The lowest point of this U-shape was 39 years, almost equal to the average age of the sample, 41 years. This means that the effect of age decreases until 39 years and then rises again, thus part of the sample experiences the negative effect, while the other part of the sample experiences the positive effect. All variables showed the same results in the total model, i.e. model 4.

The OLS regression confirmed these results, except for *prior entrepreneurial experience* and *skills*. These variables became insignificant in the second model. However (recent) *prior entrepreneurial experience* was significant again in the total model. All control variables showed the same sign and significance. The second Logit analysis, investigating the highly sustainable and highly traditional entrepreneurs, confirmed the results as well. The sign and significance of the explanatory variables remained the same, except for 'some secondary education' which became significant, while the size of the effect increased. Again, all control variables showed the same sign and significance.

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<sup>12</sup> See table G in the Appendix

Hypothesis 2, concerning the social capital theory, could not be confirmed in model 2 of the first Logit analysis. Both indicators show insignificant results, indicating that there are no significant differences between sustainable and traditional entrepreneurs in this regard. In the total model, i.e. model 4, the indicator *provided capital* became significant, with the expected sign. The OLS regression showed some differences for the explanatory variables. The sign of *knowing entrepreneurs* changed, however the results are still insignificant. The sign of *provided capital* did not change. In the second model this variable became significant, and in the total model, i.e. model 4, the variable became even more significant (at the one percent level). All control variables showed the same sign and significance as in the first Logit analysis. The results of the second Logit analysis, investigating the highly sustainable and highly traditional entrepreneurs, did confirm the results. The variable *provided capital* is still positive and became significant (at the ten percent level) in this model. *Knowing entrepreneurs* is still insignificantly negative. All control variables showed the same sign and significance.

The insignificance of the indicators of social capital is interesting. *Knowing entrepreneurs* and *provided capital* are used in more empirical papers as indicators for social capital and are mostly found to be of influence when becoming an entrepreneur (Davidsson & Honig, 2003; Estrin, Mickiewicz, & Stephan, 2013). The results in this research imply that there are no significant differences between being a sustainable or a traditional entrepreneur in terms of social capital. However, it could be possible that not all relevant indicators for social capital were included, due to limited data availability. As Estrin et al. (2013) found that association memberships also function as indicator for social capital and marital status and entrepreneurial parents are often included as well (Davidsson & Honig, 2003). Inclusion of these variables should be considered in further research in order to complete the findings of this paper.

An interesting finding is that the four reasons tested in the different models, show a significant negative effect compared to the reference category 'other reason'. This indicates that the appropriate reason why individuals become sustainable entrepreneurs has not yet been found. The four standard reasons used in the survey, do not include the main reason why individuals become sustainable entrepreneurs. Possible examples are ethical reason, community reason or maybe personal reasons. It is interesting for further research to find the appropriate reason, in order to conduct more precise research on this topic.

Lastly, the results presented in table D in the Appendix, including the country dummy results, are interesting. USA is the reference country, and fits quite in the middle of the sample as half of the countries show a negative effect to being a sustainable entrepreneur, compared to the USA, and the

other half of the countries shows a positive effect, compared to the USA. As most countries that show a negative effect are countries in developing areas in the world, level of development, wealth and policy could be indicators influencing the allocation of entrepreneurship. In particular the more developed countries showed a positive effect compared to the USA. This could be due to the effect of policy of the different countries. When investigating the hypotheses using continental dummies instead of country dummies, the effects of the explanatory variables changed significantly. This indicates that different continents, with different wealth-levels, have different numbers of sustainable entrepreneurs in that continent, due to the difference in wealth level. Furthermore policy could play a role as well. For further research it would be interesting to take the level of development of a country in account when investigating the allocation of entrepreneurship.

Based on these results, the main research question; 'Are sustainable entrepreneurs different from traditional entrepreneurs, and how?' can be answered affirmative, as significant differences are shown. However, not all variables, derived from the hypotheses, influence the probability of being a sustainable entrepreneur as expected. This means that 'how' the entrepreneurs are different, is not completely as expected.

## 5.2 Limitations

It should be realized that the present paper has several limitations that naturally arise from the design of the survey used in this paper and the analysis conducted based on this survey, which should be taken into account when interpreting the results. In particular, this subsection will elaborate on several empirical limitations with respect to measurement, comparability, generalizability and the data availability.

As emphasized throughout this paper, sustainable entrepreneurship is still an emerging field of research, literature is still scarce and large scale quantitative empirical research is lacking. Furthermore, there is an ambiguous use of terminology in the literature and definitions are not used in accordance. This gives measurement challenges and complicates comparability. The dataset used in this paper is apparently the first that allows for a quantitative detailed empirical analysis of individual drivers and antecedents of sustainable entrepreneurship (compared to traditional entrepreneurship). This comes along with numerous empirical limitations. The identification of sustainable entrepreneurs is based on the allocation of a total of 100 points for the goals of the organization, including economical, social and environmental goals. This allocation of points measures the objective of the organization, and does not measure their actual sustainability. Also,

the definition of a sustainable entrepreneur is created by adding the points for social and environmental goals into a sustainable goal, which is not in line with all literature. Furthermore, the boundary between a traditional entrepreneur and a sustainable entrepreneur is set by the author of this paper, because of the lack of similar previous research. This is a limitation of the research and should be taken into account when interpreting the results.

A second possible limitation is related to the design of the survey and thus to the method applied in this paper, namely an interpretation bias. The same survey questions were asked in 55 different countries (of which 52 were used in this thesis), which could lead to interpretation problems. Different countries have different cultures, which influences the interpretation of the question by an individual. For example, the respondents could think they have (major) sustainable goals, while in the interpretation of others these goals are merely minor. This interpretation problem is a limitation of the empirical research, as the research is based on the individual responses to the questions of this survey.

Lastly, the empirical research showed some mixed results. A reason for these mixed results could be the omitted variable bias; there are some variables of influence not included in the model. Variables that could be of extra influence are for example institutional variables, (sustainable) policy measures and culture. Furthermore the level of development could play a role, and would be interesting to include in the model. For social capital, indicators as association memberships, marital status and entrepreneurial parents could be included in order to complete the model further. As a consequence of the omitted variable bias, the influence of these (extra) variables could be captured (partly) by some other variables in the model. The influence of the inclusion of these variables would be interesting for further research in this subject. Furthermore, the data availability is limited to one survey in 2009, in order to examine drivers and characteristics of sustainable entrepreneurs on the individual level. If data from several years would be available, more certain conclusions could be drawn, and for further research it would be interesting to compare the results of several years with the results of the one-year-data.

The control variables in the models used in the research could also be defined different ways. The control variable country was also included as a categorical variable with 4 categories containing the different continents, which led to different results. This could be interesting for further research to investigate deeper, as some continents are more developed and wealthier than others, and have different policies concerning environmental/social regulation. When including these indicators it is possible to measure how these differences affect the probability of being a sustainable entrepreneur.

Hence, the results of the present study should be understood as indications for the fact that there are significant differences between sustainable and traditional entrepreneurs and it is worth to research these differences in more detail in further research.

## 6. Conclusion

In this preliminary research the following research question: '*Are sustainable entrepreneurs different from traditional entrepreneurs, and how?*' has been examined. For this research novel data from the GEM-survey 2009 special topic: 'social entrepreneurship activity' has been used. This is the first dataset that allows for a quantitative detailed empirical analysis of individual drivers and antecedents of sustainable entrepreneurship. The purpose of this research was to investigate the presence of differences on the individual level between sustainable and traditional entrepreneurs, and if these differences exist, what are these differences? Based on previous literature two approaches were used in order to find and categorize possible differences; the human capital theory and the social capital theory.

Two hypotheses were formed in order to answer the main research question. The first hypothesis is based on information found in the literature research concerning the human capital theory: it was expected to find a positive relationship between human capital and owning a sustainable venture. This positive influence of human capital on the probability of being a sustainable entrepreneur could only partly be proven. Education was found to improve this probability, as expected, while prior entrepreneurial experience and self-perceived skills decrease this probability, confirming that there are individual differences between sustainable and traditional entrepreneurs, however not in the expected direction. Age did show a positive and negative effect, because of the non linearity, creating an U-shaped effect.

Furthermore, the second hypothesis was derived from the literature concerning the social capital theory, stating a positive relationship between social capital and managing/owning a sustainable venture. In the empirical analysis the indicators for the social capital theory were not found to significantly influence the probability of being a sustainable entrepreneur relative to being a traditional entrepreneur.

Overall, the results of the empirical analysis prove the existence of significant differences between sustainable and traditional entrepreneurs in this (preliminary) research. These results contribute to the existing literature concerning empirical research on sustainable entrepreneurship and suggest some areas for further exploration and research in more detail by researchers in this field.



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## 8. Appendix

**Table A: Descriptive statistics dependent variable**

Dependent variable	Definition	Mean	S.D.
Sustainable entrepreneur	1= sustainable entrepreneur ( $\geq 70$ point for social and environmental goals) 0=traditional entrepreneur	0.15	0.35

**Table B: Definition and descriptive statistics of explanatory and control variables**

Explanatory variables		Mean/ Percentage		S.D.		Number of observations		Pearson Chi Square	P-value
		S	T	S	T	S	T		
Prior entrepreneurial experience	1=respondent has prior entrepreneurial experience in the past 12 months, 0 otherwise	0.08	0.09	0.27	0.29	3.742	21.714	5.678	0.017
Skills	1= respondent answered to have the required skills, knowledge and experience to start a new business, 0 otherwise	0.82	0.84	0.38	0.36	3.519	20.602	12.191	0.000
Age/10	Age between 18-99 at time of interview. Devided by 10.	4.23	4.10	1.32	1.25	3691	21.552	138.524	0.000
Age/10 <sup>2</sup>	Age between 18-99 at time of interview. Devided by 10 and squared.	19.62	18.39	11.76	10.76	3.619	21.552	138.524	0.000
Education	None	7.23%	13.03%	0.26	0.34	3.707	21.646	208.546	0.000
	Some secondary	14.51%	18.83%	0.35	0.39				
	Secondary degree	35.12%	34.10%	0.48	0.47				
	Post secondary	38.14%	31.04%	0.38	0.46				
	Graduate	4.99%	3.00%	0.05	0.17				
Provided capital	1= respondent provided funds in the past three years, 0 otherwise	0.10	0.09	0.30	0.29	3.742	21.708	1.240	0.265
Knowing entrepreneurs	1= respondent knows someone who has started a business in the past two years, 0 otherwise	0.58	0.59	0.49	0.49	3.537	20.841	2.495	0.114
Gender	1= male, 0=female	0.42	0.37	0.49	0.48	3.755	21.800		
Fear of failure	1= fear of failure would prevent respondent from starting a business, 0 otherwise	0.27	0.28	0.44	0.45	3.513	20.629		
Early stage entrepreneur	1= respondent is owner/manager of a business <3,5 years, 0 otherwise	0.32	0.32	0.47	0.47	3.755	21.802		
Reason	Other	45.46%	46.17%	0.50	0.50	3126	20914		
	Take advantage of business opportunity	28.95%	29.15%	0.45	0.45				
	No better choices for work	11.16%	11.46%	0.31	0.32				
	Combination of both of the above	4.51%	6.65%	0.21	0.25				
	Have a job but seek better opportunities	9.92%	6.57%	0.29	0.25				

Note: S=sustainable entrepreneurs, T=traditional entrepreneurs. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Source: GEM 2009 special report on social entrepreneurship.



**Table C: Number of observations and percentage of sustainable entrepreneurs per country starting at the country with the lowest number of sustainable entrepreneurs**

Country	Observations	Percentage	Country	Observations	Percentage
Ecuador	5	0.13	Finland	56	1.49
Yemen	7	0.19	Japan	60	1.60
West bank & Gaza strip	7	0.19	Algeria	68	1.81
Malaysia	14	0.37	Korea	68	1.81
Panama	15	0.40	Belgium	69	1.84
Saudi Arabia	15	0.40	South Africa	69	1.84
Romania	16	0.43	Switzerland	70	1.86
Brazil	18	0.48	Dominican	72	1.92
Hungary	22	0.59	Denmark	73	1.94
Serbia	22	0.59	Latvia	74	1.97
Shenzhen	26	0.69	Norway	80	2.13
Israel	28	0.75	Germany	83	2.21
Jordan	30	0.80	Greece	83	2.21
Iran	31	0.83	Colombia	84	2.24
Guatemala	33	0.88	Netherlands	89	2.37
Hong Kong	35	0.93	Iceland	97	2.58
Peru	37	0.99	Uganda	101	2.69
Italy	39	1.04	Argentina	109	2.90
Uruguay	39	1.04	Slovenia	115	3.06
Lebanon	41	1.09	Jamaica	121	3.22
Syria	43	1.15	United States	141	3.75
Venezuela	45	1.20	Chile	145	3.86
Tonga	46	1.23	China	154	4.10
Morocco	52	1.38	Spain	331	8.81
Bosnia and Herzegovina	54	1.44	United Kingdom	478	12.73
United Arab Emirates	54	1.44			
Croatia	56	1.49	Total	3,755	100.00

Source: GEM Survey 2009: 'social entrepreneurship'

**Table D: Average marginal effects from logistic regression with sustainable entrepreneur as dependent variable per country**

	Model 1	Model 2	Model 3	Model 4
Predicted probability: Sustainable entrepreneur	0.13	0.13	0.13	0.13
<b>Negative</b>				
Yemen	-0.2879*** (0.0437)	-0.2800** (0.0438)	-0.2871*** (0.0438)	-0.2800*** (0.0438)
West bank & Gaza strip	-0.2674*** (0.0564)	-0.2508*** (0.0561)	-0.2664 (0.0564)	-0.2501*** (0.0561)
Ecuador	-0.2414*** (0.0565)	-0.2198*** (0.0562)	-0.2419*** (0.0565)	-0.2197*** (0.0562)
Brazil	-0.1725*** (0.0298)	-0.1516*** (0.0302)	-0.0179*** (0.0306)	-0.1582*** (0.0310)
Lebanon	-0.1419*** (0.0265)	-0.1261*** (0.0268)	-0.1399*** (0.0266)	-0.1244*** (0.0268)
Serbia	-0.1190*** (0.0327)	-0.1110*** (0.0337)	-0.1154*** (0.0327)	-0.1083*** (0.0337)
Panama	-0.1205*** (0.0326)	-0.1048*** (0.0327)	-0.1202*** (0.0327)	-0.1047*** (0.0327)
Malaysia	-0.1255*** (0.0441)	-0.0943** (0.0442)	-0.1175*** (0.0443)	-0.0869** (0.0443)
Peru	-0.1019*** (0.0240)	-0.0830*** (0.0247)	-0.1043*** (0.0243)	-0.0823*** (0.0247)
Venezuela	-0.0956*** (0.0319)	-0.0813** (0.0320)	-0.0939*** (0.0320)	-0.0799** (0.0320)
Hungary	-0.0838*** (0.02834)	-0.0805*** (0.0296)	-0.0828*** (0.0284)	-0.0798*** (0.0296)
Saudi Arabia	-0.0904*** (0.0350)	-0.0757** (0.0350)	-0.0898*** (0.0350)	-0.0755** (0.0351)
Tonga	-0.0594** (0.0261)	-0.0640** (0.0279)	-0.0622** (0.0265)	-0.0680** (0.0284)
Uruguay	-0.0606** (0.0814)	-0.0645** (0.0276)	-0.0598** (0.0259)	-0.0640** (0.0277)
Jordan	-0.0773*** (0.0270)	-0.0617** (0.0273)	-0.0761*** (0.0270)	-0.0609** (0.0273)
Guatemala	-0.0496** (0.0239)	-0.0292 (0.0249)	-0.0544** (0.0244)	-0.0353*** (0.0253)
Israel	-0.0497 (0.0315)	-0.0375 (0.0316)	-0.0457 (0.0316)	-0.0352 (0.0316)
Uganda	-0.0618*** (0.0174)	-0.0296 (0.0193)	-0.0618*** (0.0175)	-0.0310 (0.0194)
Spain	-0.0376*** (0.1457)	-0.0266** (0.0152)	-0.0383*** (0.0147)	-0.0276* (0.0153)

**Table D continued**

Chile	-0.0324*	-0.0231	-0.0327*	-0.0241
	(0.0167)	(0.0173)	(0.0168)	(0.0174)
Algeria	-0.0214	-0.0197	-0.0240	-0.0202
	(0.0207)	(0.0223)	(0.0212)	(0.0226)
Italy	-0.0056	-0.0139	-0.0011	-0.0184
	(0.0241)	(0.0244)	(0.0242)	(0.0245)
Colombia	-0.0301*	-0.0168	-0.0306*	-0.0177
	(0.0182)	(0.0187)	(0.0182)	(0.0187)
China	-0.0291*	-0.0114	-0.0243	-0.0088
	(0.0164)	(0.0174)	(0.0166)	(0.0176)
Morocco	-0.0230	-0.0009	-0.0187	-0.0024
	(0.0210)	(0.0223)	(0.0211)	(0.0225)
<b>Positive</b>				
South Africa	0.1275***	0.1413***	0.1278***	0.1407***
	(0.0218)	(0.0224)	(0.0212)	(0.0225)
Japan	0.1237***	0.1262***	0.1233***	0.1256***
	(0.0220)	(0.0227)	(0.0220)	(0.0228)
Slovenia	0.0978***	0.1052***	0.0993***	0.1062***
	(0.0191)	(0.0196)	(0.0192)	(0.0197)
Norway	0.0826***	0.0925***	0.0811***	0.0906***
	(0.0193)	(0.0198)	(0.0194)	(0.0198)
Hong Kong	0.0789***	0.0817**	0.0813***	0.0829**
	(0.0259)	(0.0402)	(0.0260)	(0.0404)
Bosnia and Herzegovina	0.0726***	0.0603***	0.0716***	0.0817***
	(0.0238)	(0.0243)	(0.0243)	(0.0248)
United Kingdom	0.0762***	0.0761***	0.0754***	0.0755***
	(0.0143)	(0.0150??)	(0.0144)	(0.0151)
Iceland	0.0711***	0.0763***	0.0700***	0.0746***
	(0.0194)	(0.0199)	(0.0196)	(0.0201)
Croatia	0.0532**	0.0603**	0.0547**	0.0616**
	(0.0236)	(0.0242)	(0.0239)	(0.0245)
The Netherlands	0.0449**	0.0582***	0.0456**	0.0593***
	(0.0200)	(0.0205)	(0.0200)	(0.0206)
Greece	0.0437**	0.0542***	0.0429**	0.0534***
	(0.0192)	(0.0196)	(0.0193)	(0.0197)
Denmark	0.0529**	0.0503**	0.0508**	0.4782*
	(0.0246)	(0.0254)	(0.0249)	(0.0257)
Switzerland	0.0425**	0.0496**	0.0394*	0.0467**
	(0.0207)	(0.0210)	(0.0209)	(0.0212)
Germany	0.0517***	-0.0449**	-0.0507***	-0.0439**
	(0.0188)	(0.0193)	(0.0189)	(0.0194)
Belgium	0.0394*	0.0504**	0.0361	0.0468**
	(0.0231)	(0.0233)	(0.0233)	(0.0235)

**Table D continued**

Jamaica	0.0242 (0.0170)	0.0412** (0.0180)	0.0236 (0.0171)	0.0401** (0.0181)
Finland	0.0263 (0.0222)	0.0394* (0.0225)	0.0272 (0.0223)	0.0399* (0.0226)
Dominican Republic	0.0253 (0.0193)	0.0368** (0.0199)	0.0262 (0.0194)	0.0373** (0.0200)
Argentina	0.0260 (0.0182)	0.0365* (0.0186)	0.0231 (0.0184)	0.0334* (0.0188)
Korea	0.0390** (0.0198)	0.0389* (0.0209)	0.0347* (0.0203)	0.0334 (0.0215)
Iran	0.0119 (0.0259)	0.0330 (0.0275)	0.0169 (0.0268)	0.0308 (0.0284)
United Arab Emirates	0.0199 (0.0218)	0.0307 (0.0221)	0.0171 (0.0222)	0.0270 (0.0224)
Syria	0.0141 (0.0224)	0.0292 (0.0273)	0.0108 (0.0226)	0.0251 (0.0232)
Shenzhen	0.0150 (0.0292)	0.0247 (0.0313)	0.0137 (0.0298)	0.0216 (0.0320)
Latvia	0.0158 (0.0200)	0.0229 (0.0207)	0.0148 (0.0202)	0.0212*** (0.0209)
Romania	0.0183 (0.0355)	0.0363 (0.0357)	0.0016 (0.0395)	0.0135 (0.0394)

*Note:* Countries are ranked from large result to small result, based on results of total model, i.e. model 4. Reference country is USA. Standard errors in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

*Source:* GEM Survey 2009: 'social entrepreneurship'

**Table E: Descriptive statistics dependent variable OLS**

Variable	Definition	Mean	S.D.
Sustainable entrepreneur	Continuous variable with scores ranging from 0-100 for social + environmental goals.	37.06	26.93

**Table F: Descriptive statistics dependent variable 'highly sustainable' and 'highly traditional'**

Variable	Definition	Mean	S.D.
Highly sustainable entrepreneur	1= highly sustainable entrepreneur (≥70 point for social and environmental goals) 0=highly traditional entrepreneur (≥70 point for economical goals)	0.22	0.42

**Table G: Reasons for exit business**

Reason	Frequency	Percentage
An opportunity to sell the business	224	4.04
The business was not profitable	1.958	34.29
Problems getting finance	984	17.73
Another job or business opportunity	489	8.81
Exit planned in advance	157	2.83
Retirement	276	4.97
Personal reasons	1.197	21.57
An incident	264	4.76
Total	5.549	100.00

*Note:* follow-up question for respondents that replied YES to the following question: 'You have, in the past 12 months, sold, shut down, discontinued or quit business you owned and managed, any form of self-employment, or selling goods or services to anyone'

*Source:* GEM Survey 2009: 'social entrepreneurship'