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MSc Entrepreneurship and Strategy Economics

Survival of the fittest?

An inquiry into the factors related to the survival of social and commercial enterprises

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Abstract

There has been an increasing interest in the concept of social entrepreneurship, not only from a societal perspective but also from an academic perspective. Nevertheless, a common definition of social entrepreneurship has yet to emerge and the amount of empirical literature devoted to the topic remains scarce. An important contribution that this paper makes to the existing literature is that it carries out an in-depth empirical analysis using data from the Flash Eurobarometer Survey on Entrepreneurship 2009 (No. 283). More specifically, this paper examines which factors are related to the survival of social enterprises and if these factors differ for commercial enterprises. With the use of binary logit models this paper examines the association between the survival of (social) enterprises and several characteristics of the entrepreneurs responsible for those enterprises (education, age, risk attitude, growth preferences, and the willingness to change things) as well as external influences (a lack of financial support, a lack of information, and the variety of capitalism in the country in which the entrepreneur operates) and some control variables (gender, competitiveness, and having self-employed parents). The dependent variable in these binary logit models indicates whether the enterprise has survived for at least three years or whether it has failed. The models are estimated separately for social and commercial entrepreneurs. In addition, the same model is estimated for the complete sample, with an additional explanatory variable that indicates whether the entrepreneur is a social or commercial entrepreneur. A remarkable finding, which contrasts with a lot of previous literature and common perception, is that when the internal and external factors are included in the analysis, being a social entrepreneur is not negatively related to survival anymore. This important finding indicates that the common perception that social entrepreneurs have inferior performance, as compared to commercial entrepreneurs, can be explained by the different internal characteristics and external influences that social entrepreneurs face, which provides a promising outlook for the future of social entrepreneurship. Another important finding of this paper is that there are some notable differences between the factors related to the survival of social and commercial entrepreneurs; this highlights the importance of treating these two types of entrepreneurs as separate groups. Although these findings are interesting, more research is definitely needed to scrutinize the results and enhance our understanding of social entrepreneurs.

Table of Contents

1. Introduction

Social entrepreneurship is on the rise. From an academic as well as from a societal point of view, there is an increasing interest in social entrepreneurs and their actions. In academia, more and more articles and books are being written about social entrepreneurship and it is even incorporated into the curricula of leading universities. In addition, there is an abundance of websites dedicated to the topic and numerous associations exist that are aiming to improve the implementation of social entrepreneurship. Correspondingly, the media is paying increasing attention to social entrepreneurs and social entrepreneurship has an improved image within society. Although these are favorable developments, a clear academic definition of the concept and a backing of empirical support are still lacking. Studies that do investigate the phenomenon are often conceptual or case studies rather than empirical (Mair & Martí, 2006; Short, Moss, & Lumpkin, 2009). Therefore, this paper provides an important contribution to the existing literature, since next to providing an overview of the existing definitions it endeavors to carry out an empirical investigation.

More specifically, the aim of this paper is to empirically investigate which factors are associated with the success of social entrepreneurs. The most natural way to examine the success of a social enterprise would be to measure its social value. However, it is extremely difficult to objectively measure social value and even more difficult to find a quantitative measure that applies to a wide array of social ventures. As Emerson has noted ''for many of those active in the social sector, it has been taken as a virtual given that most elements of social value stand beyond measurement and quantification'' (Emerson, 2003, p. 40). Nevertheless, it is irrefutable that if a social enterprise is unable to survive it will not be able to realize its social goals. In other words, survival can be regarded as a prerequisite for success. Social enterprises focus on the continuation of their organization in order to achieve their social mission (Weerawardena & Sullivan Mort, 2006). Moreover, since new ventures face many challenges, such as demand uncertainty and a lack of resources, survival is often regarded as a critical measure of success (Van de Ven, Hudson, & Schroeder, 1984). Thus, it would be interesting to examine if there are particular factors that can predict the successful continuation of social enterprises, which might be different from those of commercial enterprises (Peredo & McLean, 2006). This leads to the following research question:

Are there specific factors associated with the survival of social enterprises, and are these factors different from those associated with the survival of commercial enterprises?

To empirically investigate this question, a unique dataset is used from the Flash Eurobarometer Survey on Entrepreneurship, which contains data on entrepreneurial activity for 36 countries. To

examine the influence of different internal and external factors, such as human capital and financial resources, binary logit models will be estimated. The dependent variable indicates whether the business has survived for at least three years or has failed. Moreover, these binary logit models will also examine whether the variety of capitalism that exists in the country where the entrepreneur is operating is related to the enterprise's survival. The models will be estimated separately for social and commercial entrepreneurs. In addition, the same model will be estimated for all entrepreneurs simultaneously, with social involvement included as an additional explanatory variable, in order to examine whether being a social entrepreneur is related to the survival of the business.

The existing literature on social entrepreneurship is still in its infancy and is generally concerned with defining the concept as a common definition has not yet emerged (Mair & Martí, 2006; Short et al., 2009). The current paper contributes to the existing literature, first of all, by providing an overview of the existing definitions and constructing a definition that is suitable for empirical research. Secondly, as the relative and absolute number of empirical studies on social entrepreneurship is limited (Hoogendoorn, Pennings, & Thurik, 2010), this study contributes to the existing literature by carrying out an in-depth empirical analysis using a unique dataset. Insights obtained from previous studies are often idiosyncratic and based on successful social entrepreneurs, which might lead to biased results (Dacin, Dacin, & Matear, 2010). More specifically, this paper examines which factors are related to the survival of social enterprises, a topic on which there has been relatively little research (Yitshaki, Lerner, & Sharir, 2008), even though the topic is relevant since the ability of social enterprises to survive is a necessary condition for achieving their social mission. Furthermore, for commercial entrepreneurs there has been a great deal of empirical research examining the factors related to survival (e.g., Bates, 1990; Bosma, Van Praag, & De Wit, 2000; Van Praag, 2003); thus, another important contribution of this paper is examining whether these factors are similar or different for social entrepreneurs.

This paper is of interest to (potential) social entrepreneurs as well as policymakers. The world can undoubtedly use more entrepreneurial efforts to solve social problems. However, this does not imply that as many people as possible should become a social entrepreneur since not everyone possesses the characteristics required for success (Dees, 1998b). Consequently, if research can determine which characteristics are related to the success of social entrepreneurs, this can provide useful insights. Individual characteristics that lead to the success of social entrepreneurs might be markedly different from those that lead to the success of commercial entrepreneurs (Peredo & McLean, 2006). If individuals are better informed ex ante about their chances of success, they can

adjust their behavior accordingly. Furthermore, as this paper also examines external factors which might be of influence, the results are useful for policymakers as well, since it allows them to adjust their policies accordingly. Examples of such policies include improving the education system and advancing financing opportunities for social entrepreneurs.

The regression results show that, as expected, for both commercial and social entrepreneurs there is a significant positive association between education and survival. Additionally, there is evidence of a concave relationship between the age of social entrepreneurs and the survival of their business, although this relation remains ambiguous for commercial entrepreneurs. However, previous research has shown that social entrepreneurs are mostly found in the lower and higher age categories (Hoogendoorn, Van der Zwan, & Thurik, 2011). In accordance with previous literature and expectations, there is some evidence that commercial entrepreneurs who are more willing to take risks have a greater chance of the survival of their business. However, the risk attitude of social entrepreneurs does not appear to be related to survival. In contrast, for social entrepreneurs a willingness to change things is significantly positively related to survival, whereas no significant association can be found for commercial entrepreneurs. With respect to the external factors, a lack of financial support and a lack of information appear to be significantly negatively related to the survival of social enterprises, whereas for commercial entrepreneurs there is only weak evidence that a lack of financial support is significant. Finally, it is shown that the variety of capitalism existing in the country where the entrepreneur operates is related to the survival of social as well as commercial enterprises, with the most striking result being the large negative effect of Asian capitalism as compared to market-based capitalism.

Since there are quite a lot of differences in the factors related to the survival of social and commercial entrepreneurs, this indicates the importance for treating these two types of entrepreneurs as different groups. Furthermore, the regression results show that, when taking into account the above mentioned factors, being a social (as opposed to a commercial) entrepreneur is not significantly related to the survival of the business anymore.

The remainder of the paper is organized as follows. Chapter 2 contains a review of the literature regarding social entrepreneurship and derives some hypotheses. Chapter 3 describes the dataset and methodology that will be employed to examine the research question. Chapter 4 contains some bivariate analysis as well as an overview of the regression results. A discussion of the regression results is provided in Chapter 5, together with the limitations of the analysis and interesting avenues for further research. Finally, Chapter 6 contains some concluding remarks.

2. Literature review

In order to get a general impression of the current state of knowledge, this section contains an overview of the most important literature regarding social entrepreneurship. A logical first step of any investigation is providing a clear definition of the concept under scrutiny. Although a large part of the literature focuses on defining social entrepreneurship (e.g., Dacin et al., 2010; Dees, 1998b; Mair & Martí, 2006; Peredo & McLean, 2006; Zahra, Gedajlovic, Neubaum, & Shulman, 2009), a common definition has not yet emerged. Nevertheless, a review will be provided of the current state of knowledge and the most commonly used definitions of social entrepreneurship. Subsequently, an overview of the empirical research concerning social entrepreneurship is provided. This body of literature is even more in its infancy as most of the social entrepreneurship literature has focused on conceptual rather than empirical research (Mair & Martí, 2006; Short et al., 2009). Nonetheless, the existing literature on the factors leading to the success of commercial and social entrepreneurs will be examined and subsequently some hypotheses will be derived.

2.1 Defining social entrepreneurship

A social entrepreneur is often considered to be a special kind of entrepreneur (Dees, 1998b; Dacin et al., 2010; Peredo & McLean, 2006). Therefore, it might be useful to first have a look at the definition of conventional entrepreneurship, before examining the proposed definitions for social entrepreneurship.[1]

2.1.1 The conventional entrepreneur

Although the literature on conventional entrepreneurship has a much longer history than the literature on social entrepreneurship, there is still no commonly agreed upon definition. There are nearly as many definitions of entrepreneurship as there are contributors to the concept (Van Praag, 1999). The term "entrepreneur" was first used as early as the 17th century in France, where it referred to someone who "undertakes", that is, a person who undertakes an important activity or project. The first scholar known to recognize the role of the entrepreneur within the economic system was Cantillon, who believed that entrepreneurs are arbitrageurs who equilibrate supply and demand in the economy. These arbitrage activities always involve uncertainty (Cantillon, 1931). The term was given more meaning by Say, who acknowledged that "The entrepreneur shifts economic resources out of an area of lower and into an area of higher productivity and greater yield" (Quoted

[1] Throughout this paper, the terms "entrepreneur" and "entrepreneurship" will be used interchangeably, assuming that entrepreneurship is what entrepreneurs do, thereby entailing that these two terms define each other by implication (Peredo & McLean, 2006).

in Drucker, 1985, p. 21). Thus, entrepreneurs are able to find novel and improved ways of doing things and thereby they create value (Dees, 1998b). Say was also the first scholar to stress the managerial role of the entrepreneur and described a whole array of qualities entrepreneurs should possess. Since not many people possess these unique qualities, there is a limited number of competitors and entrepreneurs are able to earn a large residual income (Van Praag, 1999).

Throughout history, various functions have been attributed to entrepreneurs, such as bearing real uncertainty[2] (Knight, 1921), having an alertness to discover and exploit profitable opportunities in the economy (Kirzner, 1973), and being innovators who are involved in creative destruction[3] (Schumpeter, 1947). Building on these historical contributions to the literature on entrepreneurship, different definitions of entrepreneurs have been proposed and a common definition has yet to emerge. Nevertheless, a distinction can be made between two dominant views. The first is referred to as the "occupational notion of entrepreneurship" and denotes the ownership and management of a venture for one's own account and risk; the second is called the "behavioral notion of entrepreneurship" as it involves seizing economic opportunities and considers the entrepreneur to be an innovator or pioneer (Sternberg & Wennekers, 2005). However, these two perspectives might be too dichotomous and it has been recognized that a combination of these two concepts can also exist (Sternberg & Wennekers, 2005). For example, entrepreneurship can be viewed as the process of new venture creation (Gartner, 1990). This latter definition will be the definition of entrepreneurship that is employed in this paper since it applies to social as well as commercial entrepreneurs as it allows for different motives when creating a new venture.

In addition to the literature on the different roles of entrepreneurs and the definition of entrepreneurship, a large amount of research has recognized the benefits of entrepreneurship for society, such as the creation of employment, economic growth, and innovation (Van Praag & Versloot, 2007). Nevertheless, there is still a prevailing view that there are remaining problems in society that market mechanisms and conventional entrepreneurs are unable to solve and this is

[2] Knight (1921) was the first to make an explicit distinction between risk and uncertainty. In contrast to risk, which consists of calculable probabilities, uncertainty comprises the outcome of a unique event such as changes in consumer demand or purchasing power. It is the task of the entrepreneur to bear this risk on behalf of society (Knight, 1921).

[3] According to Schumpeter, "the function of entrepreneurs is to reform or revolutionize the pattern of production" (1947, p. 132). Thus, entrepreneurs create economic growth by disrupting the existing equilibrium and instead creating a new equilibrium. Schumpeter (1947) was the first to consider innovation as endogenous and considered the entrepreneur to be a leader and innovator instead of a manager. He rejected the view that entrepreneurs are risk-bearers or capitalists. Entrepreneurs have a scarce intrinsic motivation to innovate. However, the profits are not lasting and entrepreneurship is a temporary condition unless that person keeps innovating (Schumpeter, 1947).

where social entrepreneurship comes into play to fill the void (Austin, Stevenson, & Wei-Skillern, 2006; Mair, 2010; Sharir & Lerner, 2006; Zahra et al., 2009). The following section describes the most important views and definitions of social entrepreneurs.

2.1.2 The social entrepreneur

An important question which many scholars (e.g., Dacin et al., 2010; Dees, 1998b; Mair & Martí, 2006; Peredo & McLean, 2006) have considered is: What distinguishes a social entrepreneur from a conventional entrepreneur? Unfortunately, there is no clear-cut answer to this question and it remains a challenge to define the boundaries of what is meant by "social". At first glance it might appear that social entrepreneurs are altruistic whereas conventional entrepreneurs merely care about profits. However, this distinction is probably too dichotomous as social entrepreneurship can also be based on less altruistic motives like self-fulfillment (Mair & Martí, 2006). Moreover, conventional entrepreneurship can also be productive from a social perspective. By pursuing self-interested goals entrepreneurs can also improve social wealth by creating new technologies, industries, markets, and jobs and thereby increasing real productivity (Venkataraman, 1997).

Hence, there have to be other distinguishing characteristics between social and commercial entrepreneurs. However, this is where the views of scholars differ. First of all, some scholars argue that a distinguishing feature of social entrepreneurs is their ability to creatively combine existing resources, which they often do not possess themselves, to address a social problem (Dees, 1998b; Mair & Martí, 2006; Peredo & McLean, 2006). A related distinguishing feature of social entrepreneurs is that they tend to use these resources in a cooperative manner and often share them with other enterprises (Dacin et al., 2010). This trait may distinguish the "true" social entrepreneurs (e.g., Aravind Eye Clinic or Ashoka) from conventional entrepreneurs with a social conscience (e.g., the Body Shop or Ben & Jerry's) (Dacin et al., 2010).

Drawing on historical and recent contributions to the entrepreneurship literature, Dees (1998b) defines social entrepreneurs as change agents in the social sector. Social entrepreneurs achieve this role through several characteristics. First of all, they adopt as their mission the creation of social value as opposed to private value. Secondly, in order to fulfill this mission they recognize and persistently pursue new opportunities. Thirdly, they are continuously engaged with innovating, learning, and adapting. Fourthly, they are not constrained by the current resources they have at hand. Finally, they are extremely involved with the constituencies they are serving and the outcomes created. Remarkably, many of the characteristics that Dees (1998b) attributes to social entrepreneurs are similar to those of commercial entrepreneurs and it appears that the main

defining characteristic of social entrepreneurs is their mission to create social value as opposed to commercial value. It must be noted that Dees (1998b) emphasizes that this is an idealized definition of the concept. Thus, social sector leaders will satisfy the different elements of the definition in different ways and to various degrees. Nevertheless, the closer someone comes to satisfying all of these conditions, the more that person fits the definition of a 'true' social entrepreneur.

Recognizing the fragmented and undeveloped stage of the literature on social entrepreneurship, Weerawardena and Sullivan Mort (2006) employ grounded theory methodology to empirically derive a model of social entrepreneurship. In order to carry out their research, they define social entrepreneurship as "a behavioral phenomenon expressed in a not-for-profit organization context aimed at delivering social value through the exploitation of perceived opportunities" (Weerawardena & Sullivan Mort, 2006, p. 25). After conducting in-depth interviews with nine organizations, their findings indicate that social entrepreneurs are constrained by and respond to environmental dynamics and strive to create social value by being innovative, proactive, and adequately managing risks.

However, not all scholars agree with the definition of Weerawardena and Sullivan Mort (2006) since there is some disagreement on the importance of profits for the company. At one extreme are those scholars who argue that social entrepreneurs should exclusively focus on social goals; they believe that only not-for-profit (NFP) organizations should be categorized as social enterprises (Anderson & Dees, 2002; Dees, 1998b; Dees, Emerson, & Economy, 2002; Thompson, 2002; Weerawardena & Sullivan Mort, 2006). At the other extreme, some scholars exclude NFPs from the definition of social entrepreneurship (Zahra et al., 2009). Confining the concept of social entrepreneurship to either for-profit or NFP enterprises is probably too limited and would exclude a lot of successful enterprises from the definition (Peredo & McLean, 2006). Consider, for example, the Grameen Bank, a microcredit lending agency in Bangladesh that extends credit to poor people who normally would not qualify for a loan. The Grameen Bank obviously has a social mission. However, it also makes profits which are reinvested into the company to increase lending capacity. Excluding such companies from the definition would thus limit the concept of social entrepreneurship.

Accordingly, the question becomes where to draw the boundary between a social and a commercial enterprise. This is a difficult, if not impossible, question to answer as the boundary is often non-decisive and appears not only to be vague but also porous as companies often move from one side to

the other (Peredo & McLean, 2006)[4]. Due to these difficulties, it might be wise to follow the practice of scholars who use a broad definition and include both for-profit and not-for-profit enterprises (Dacin et al., 2010; Mair, 2010; Peredo & McLean, 2006). Thus, for-profit or not-for-profit status should not be seen as a defining characteristic of a social enterprise but rather as an adaption the enterprise has made to optimally suit the local context (Mair, 2010). Instead it might be more useful to focus on the enterprise's social mission and motives, since one generalization that can be made is that most definitions of social entrepreneurship denote a capability to leverage resources to solve social problems (Dacin et al., 2010).

Another limitation of many definitions and empirical research in the social entrepreneurship literature is that the focus is often on the successful social entrepreneur (Dacin et al., 2010; Peredo & McLean, 2006). However, a plausible definition must also allow for unsuccessful entrepreneurs (Dacin et al., 2010; Tan, Williams, & Tan, 2005). Especially in light of the goals of this paper, one of which is to examine the factors related to the success of businesses, it is important that the employed definition also considers unsuccessful enterprises in order to be able to compare both sides of the spectrum. More specifically, the conceptualization of social entrepreneurship used in this paper will be based on whether respondents find it very or rather important (as opposed to rather not important or not important at all) to address an unmet social or ecological need when taking steps to start a new business or taking over an existing one. The dataset only includes people who have their own company or had one in the past. Thus, in light of this research, a social entrepreneur can be defined as someone who owns or has owned a business and for whom social motives were important when starting this business. This implies that in this paper a defining characteristic of social entrepreneurs is having social motives, which corresponds with the view of many scholars who argue that the social mission and motives of a social entrepreneur should be explicit and central (Austin et al., 2006; Dacin et al., 2010; Dees, 1998b; Weerawardena & Sullivan Mort, 2006; Yitshaki et al., 2008; Zahra et al., 2009).

2.2 Factors influencing entrepreneurial success

The aim of this paper is to examine which factors are related to the success of social entrepreneurs and if these factors are different from those of commercial entrepreneurs. In order to be able to examine this, it first needs to be decided how to measure success. As noted above, the main distinguishing elements of a social enterprise are its social mission and motives. Hence, an obvious measure of success would be the degree to which the goals of the social enterprise are reached

[4] Please refer to the article of Peredo and McLean (2006) for more examples.

(Sharir & Lerner, 2006). However, this measure is rather subjective and difficult to construct as it is very difficult to quantify social value (Emerson, 2003; Weerawardena & Sullivan Mort, 2006; Zahra et al., 2009). Another commonly used measure of success is profit (Robinson & Sexton, 1994; Schutjens & Wever, 2000; Van Praag, 1999). However, information on financial returns is not available in the dataset. Moreover, it has been recognized that profit represents individual success and does not measure the success for society; the latter may be represented better by the survival period of the enterprise (Bosma et al., 2000). Furthermore, in contrast to commercial entrepreneurs, social entrepreneurs are often not focused on financial outcomes but rather on processes (Parkinson & Howorth, 2008). Consequently, this paper will measure success as the ability of entrepreneurs to survive. Since new ventures face many challenges, such as demand uncertainty and a lack of resources, survival is often regarded as a critical measure of success (Van de Ven et al., 1984). Moreover, survivability is often used as a measure of success for commercial entrepreneurs (e.g., Bates, 1990; Bosma et al., 2000; Van Praag, 2003), which enables the comparison of the factors associated with the success of social and commercial entrepreneurs.

Since there is not a large number of empirical studies on social entrepreneurship in general (Mair & Martí, 2006; Short et al., 2009), there are also very few studies that examine the success of social enterprises. One notable exception is the field study of Sharir and Lerner (2006) that examined which factors affect the success of 33 social enterprises in Israel. Using multiple performance measures[5], their findings indicate eight factors that contribute to the success of social enterprises (in order of decreasing importance): 1) the social network of the entrepreneur, 2) total dedication, 3) financial resources when starting the venture, 4) acceptance of the enterprise in public discourse, 5) composition of the team of the enterprise, 6) long-term cooperation with other organizations, 7) ability to stand the market test (e.g., charging fees to customers or obtaining long-term contracts), and 8) previous managerial experience of the entrepreneur. Of these factors contributing to success, only the social network and total dedication can be regarded as necessary dimensions for success, whereas the other six factors are sufficient but not necessary for achieving success (Sharir & Lerner, 2006). The most important limitations of their study are the relatively small sample that is used, which only comprises data from Israel, and the fact that no advanced empirical analysis is conducted, which reduces the generalizability of the findings. The current paper addresses these issues by examining a large number of entrepreneurs operating in 36 different countries and conducting bivariate as well as multivariate statistical analysis.

[5] The performance measures used by Sharir and Lerner (2006) include: 1) the degree to which the goals of the social enterprise are reached, 2) the capability of the enterprise to continue its existing operations by acquiring the required resources, 3) the amount of resources available for growth and development, and 4) long-term survival.

As is shown by Sharir and Lerner (2006) and confirmed by other scholars, the success of (social) enterprises depends both on the entrepreneur and on the environment (Bosma et al., 2000; Schutjens & Wever, 2000; Stam, Thurik, & Van der Zwan, 2010; Weerawardena & Sullivan Mort, 2006). Thus, as the objective of this paper is to examine the determinants of entrepreneurial survival, both individual characteristics as well as environmental influences should be taken into account. The following subsections identify the most important factors that might influence the survival of businesses based on previous studies on (social) entrepreneurship. First, the most important internal factors are described[6] (human capital, risk attitude, growth preferences, and the willingness to change things), followed by the most important external factors (financial resources, start-up information, and varieties of capitalism).

2.2.1 Human capital

An important internal factor that might influence the survival of social entrepreneurs is human capital. Human capital refers to the accumulation of knowledge and skills that resides within individuals (Becker, 1964). Human capital theory poses that education or training increase the productivity of workers through the advancement of useful knowledge and skills (Becker, 1964). Although previous research usually recognizes a positive relationship between human capital and the success of entrepreneurs (Bates, 1990; Bosma et al., 2000; Gimeno, Folta, Cooper, & Woo, 1997; Robinson & Sexton, 1994; Van Praag, 2003), there is some disagreement on how to measure human capital. In this paper, human capital will be measured by two indicators: education and age. The latter of these can be regarded as a broad proxy for business experience.

With respect to education, it has been shown that there is a positive relationship between the education level of the entrepreneur and the survival of commercial enterprises (Bates, 1990; Brüderl, Preisendörfer, & Ziegler, 1992). For social entrepreneurs, there is evidence that they are more likely to be highly educated, as compared to commercial entrepreneurs (Bosma & Levie, 2010; Harding, 2006; Hoogendoorn et al., 2011). However, there has not yet been an examination of the relation between education and the survival of social enterprises. Nevertheless, it is reasonable to expect that, as for commercial entrepreneurs, this relation will be positive. This leads to the following two hypotheses:

Hypothesis 1A: There is a positive relationship between the education level of social entrepreneurs and the survival of their enterprise.

[6] It must be noted that there have been relatively few economic studies examining the effects of personal characteristics on firm survival (Stam et al., 2010; Van Praag, 2003).

Hypothesis 1B: There is a positive relationship between the education level of commercial entrepreneurs and the survival of their enterprise.

For commercial entrepreneurs, there is evidence that older entrepreneurs have a higher probability of successfully continuing their firm in contrast to younger entrepreneurs who have a higher probability of terminating their business early (Bosma et al., 2000; Kalleberg & Leicht, 1991; Van Praag, 2003). However, there is also evidence of a non-linear relationship between commercial entrepreneurs' age and the survival of their enterprises, indicating that entrepreneurs in the middle-age category are more likely to survive (Bates, 1990; Holtz-Eakin, Joulfaian, & Rosen, 1994; Preisendörfer & Voss, 1990). This implies that as entrepreneurs age their enterprises' ability to survive increases up to a certain age after which it decreases again. For social entrepreneurs, there is evidence that they are more likely to be found among the higher and lower age categories, which might explain why social entrepreneurs, compared to commercial entrepreneurs, are less likely to survive the early stages of entrepreneurial engagement (Hoogendoorn et al., 2011). However, the relation between age and the ability to survive has not yet been investigated for social entrepreneurs. Nevertheless, it might be expected that this association will be similar to that observed for commercial entrepreneurs. Thus, the most intuitive reasoning is that as entrepreneurs age they have a greater chance of survival since, for example, they have more experience and better access to capital. However, at a certain age they might become less productive again, which decreases the likelihood of their business to survive. This reasoning leads to the following hypotheses:

Hypothesis 2A: There is a concave relationship between the age of social entrepreneurs and the survival of their enterprise.

Hypothesis 2B: There is a concave relationship between the age of commercial entrepreneurs and the survival of their enterprise

2.2.2 Risk attitude

Another internal factor that might influence the survival of (social) entrepreneurs is their risk attitude. Knight (1921) already recognized the ability of entrepreneurs to deal with unforeseen events and to bear the risk in the process of bringing demand and supply together. Moreover, research has shown that the ability to bear risk plays a significant role in the choice of becoming a commercial entrepreneur (Caliendo, Fossen, & Kritikos, 2009; Parker, 2009). Similarly, several scholars have recognized that social entrepreneurs also have a high tolerance for risk (Dees, 1998b;

Peredo & Mclean, 2006; Tan et al., 2005; Zahra et al., 2009) and empirical evidence has confirmed that social entrepreneurs are more risk taking (Hoogendoorn et al., 2011). Thus, there is evidence that the willingness to take risks is positively related to the decision to become an entrepreneur, for both commercial as well as social entrepreneurs. Although there has been little research on this topic, it might also be expected that (social) entrepreneurs require a willingness to take risks in order to be able to survive[7]. A study by Stam et al. (2010) indeed shows that risk tolerance is not only related to the decision to become an entrepreneur but also has a positive influence on the survival of commercial enterprises. Therefore, the following is hypothesized:

Hypothesis 3A: Social entrepreneurs' willingness to take risks is positively related to the survival of their enterprise.

Hypothesis 3B: Commercial entrepreneurs' willingness to take risks is positively related to the survival of their enterprise.

However, it has been acknowledged, that social entrepreneurs face different risks than commercial entrepreneurs (Weerawardena & Sullivan Mort, 2006), which may also have a different influence on the survival of their enterprise. In addition, it must be noted that, although there is not a large amount of literature on the role of risk attitudes in social entrepreneurship, there are still divergent views. For example, Prabhu (1999) suggests that social entrepreneurs have a rather high ability to take risks, whereas Weerawardena and Sullivan Mort (2006) argue that the risk behavior of social entrepreneurs is constrained by the primary objective to build a sustainable organization.

2.2.3 Growth preferences

It has been acknowledged that successful firms have ambitious goals (Duchesneau & Gartner, 1990) and that the growth aspirations of entrepreneurs tend to be positively related to their successfulness (Wiklund & Shepherd, 2003). In this paper, the measure that is used for the attitude towards growth of the entrepreneur is actually based on the question whether the entrepreneur would advise a friend who has just started a business to expand this business quickly or grow slowly if at all. Therefore, this measure can be regarded as a reflection of the growth preferences of the entrepreneur rather than growth ambitions for their own business, though these two might be related. Nevertheless, there is also evidence that growth preferences of entrepreneurs are positively related to their performance (Cassar, 2006; Covin & Slevin, 1991; Davidsson, 1989). Thus, it might

[7] This statement is somewhat speculative and there also exist arguments for predicting a negative relationship between the willingness to take risks and survival. For example, since risk-tolerant entrepreneurs pursue less certain opportunities they might have a lower chance of survival (Stam et al., 2010).

be expected that for both social and commercial entrepreneurs there will also be a positive relation between their preference to expand a business rapidly and their business's ability to survive. This reasoning leads to the following hypotheses:

Hypothesis 4A: There is a positive relationship between social entrepreneurs' preferences for growth and the survival of their enterprise.

Hypothesis 4B: There is a positive relationship between commercial entrepreneurs' preferences for growth and the survival of their enterprise.

Nevertheless, there might be some differences in the relation between growth preferences and survival for social and commercial entrepreneurs since social entrepreneurs are predominantly focused on social change instead of financial growth and may face different challenges. Social entrepreneurs generally respond to and are constrained by sustainable growth, for instance, because the environment in which they operate is often complex and because it is difficult for social enterprises to obtain sufficient funding, this could limit their possibilities for growth (Weerawardena & Sullivan Mort, 2006). Moreover, for both social as well as commercial entrepreneurs a willingness to grow too quickly could be a sign of over-confidence, which has a negative influence on survival (Camerer & Lovallo, 1999).

2.2.4 Willingness to change

Social entrepreneurs are often referred to as agents who facilitate change in order to create social value (Bornstein, 2007; Dees, 1998b; Sharir & Lerner, 2006). Moreover, it has been acknowledged that the motive of social entrepreneurs is to solve social problems (Dacin et al., 2010; Zahra et al., 2009), which is also reflected in the definition of social entrepreneurship employed in this paper. Extending this logic, the willingness to change things that they do not like might be related to the survival of social entrepreneurs. In other words, without the willingness to change existing practices a social entrepreneur might not be able to achieve his goals and therefore the business might fail. In contrast, the main motives of commercial entrepreneurs are often considered to be financial returns and gaining independence instead of changing institutions or practices (Parker, 2009; Sharir & Lerner, 2006). Therefore, for commercial entrepreneurs it will probably be less likely that there is a relation between the willingness to change things and survival. Hence, the following is hypothesized:

Hypothesis 5A: The willingness of social entrepreneurs to change things they do not like is positively related to the survival of their enterprises.

Hypothesis 5B: There is no relation between the willingness of commercial entrepreneurs to change things they do not like and the survival of their enterprises.

2.2.5 Financial resources

An important external factor that may influence the success of (social) entrepreneurs is the availability of financial resources. For commercial entrepreneurs it has been recognized that sufficient resources and less dependence on the external environment increase the chances of survival (Astley & Van de Ven, 1983; Bates, 1990; Stam et al., 2010). It has been argued that social entrepreneurs face special challenges concerning financial support (Thompson, Alvy, & Lees, 2000; Yitshaki et al., 2008). For social entrepreneurs it can be even harder than for commercial entrepreneurs to raise the required amount of financial resources (Austin et al., 2006; Roper & Cheney, 2005; Sharir & Lerner, 2006; Zahra et al., 2009). In contrast to commercial entrepreneurs, for social entrepreneurs there is no established venture capital infrastructure (Bygrave, D'Heilly, McMullen, & Taylor, 1996). Moreover, social entrepreneurs often purposefully operate their business in areas where markets function poorly and consumers are unable to pay a sufficient price (Austin et al., 2006; Mair & Martí, 2006). Empirical evidence confirms that social entrepreneurs, compared to commercial entrepreneurs, perceive more financial start-up barriers, which might explain why social entrepreneurs are less likely to survive the early stages of entrepreneurial engagement (Hoogendoorn et al., 2011). There is also evidence that, as with commercial enterprises, an adequate amount of financial resources at start-up contributes to the chances of success of social enterprises (Sharir & Lerner, 2006).

Thus, similar to commercial enterprises, a lack of financial resources will lead to lower survivability (Bruno, Mcquarrie, & Torgrimson, 1992; Cooper, Gimeno-Gascon, & Woo, 1994). Further, due to the fact that for social enterprises it might be even more difficult to raise additional capital and/or charge a sufficient price, the availability of financial start-up capital might be even more critical for the survival of a social enterprise than for a commercial enterprise. Consequently, the following is hypothesized:

Hypothesis 6A: Social entrepreneurs' perceived lack of financial resources at start-up is negatively related to the survival of their enterprise.

Hypothesis 6B: Commercial entrepreneurs' perceived lack of financial resources at start-up is negatively related to the survival of their enterprise.

In addition, it is expected that the negative association between a lack of financial resources and survival will be stronger for social entrepreneurs.

2.2.6 Start-up information

Next to a lack of financial support, a lack of relevant start-up information could also be an external factor that hampers the survival of entrepreneurs. For commercial entrepreneurs, it has been shown that the availability of start-up information is related to the decision to start a business and to have young business (Grilo & Thurik, 2005). Furthermore, empirical evidence has shown that individuals who perceive that they have insufficient start-up information are more likely to be social entrepreneurs and this might be a reason why social entrepreneurs are more likely to be among the lower levels of entrepreneurial engagement (Hoogendoorn et al., 2011). Thus, there is some evidence that a lack of sufficient start-up information is negatively related to the decision to become an entrepreneur. Furthermore, it might be expected that a lack of sufficient start-up information could hamper the survival of those who have already decided to become an entrepreneur since a lack of information before starting a business might lead to wrong decisions along the way, which in turn could impede the survival of the business. This reasoning leads to the following hypotheses:

Hypothesis 7A: Social entrepreneurs' perception of a lack of start-up information is negatively related to the survival of their enterprise.

Hypothesis 7B: Commercial entrepreneurs' perception of a lack of start-up information is negatively related to the survival of their enterprise.

2.2.7 Varieties of capitalism

Social entrepreneurship should not be viewed as an isolated concept but instead as something that depends on the particularities of the external environment. For instance, the political, legal, and financial system in a country could influence the emergence and development of social entrepreneurship (Dacin et al., 2010). More specifically, different varieties of capitalism might influence the emergence of social entrepreneurship and the reliance of social entrepreneurs on market-based mechanisms (Mair, 2010). Mair (2010) distinguishes between three types of economies: 1) liberal economy, where the market mechanism is considered to be the optimal way to create and maintain social and economic justice (e.g., the United States); 2) cooperative economy, where the state intervenes in the redistribution of wealth and the regulation of markets (e.g., most European countries); and 3) informal economy, where social and economic justice are determined by the affiliation to social groups instead of by the market or state (e.g., India). These different

varieties of capitalism might explain the likelihood that social entrepreneurship takes place in a certain country and also the types of needs the social entrepreneur addresses. For example, in liberal economies the likelihood of social entrepreneurship might be higher and it might rely more on market mechanisms compared to social entrepreneurship in cooperative or informal economies since in liberal economies social needs are often not taken care of by the public sector and there is generally a more entrepreneurial mindset (Mair, 2010).

Extending this logic, a relation might also be expected between the variety of capitalism in a particular country and the survival of social entrepreneurs. For instance, it might be expected that social entrepreneurs in liberal economies are less likely to survive since the government is less likely to intervene and provide support. Conversely, there might also be a positive relation between survival and social entrepreneurs operating in liberal economies as the market mechanism provides them with stronger incentives to act competitively and to innovate.

Hence, it is of interest to examine the relation between different varieties of capitalism and the survival of (social) enterprises. In order to examine this, it must be decided which classification of varieties of capitalism will be employed as different authors have constructed different classifications (Amable, 2003; Hall & Soskice, 2001; Jackson, 2002; Mair, 2010; Rhodes & Van Apeldoorn, 1997; Schmidt, 2002), albeit with a rather large amount of overlap. For example, Hall and Soskice (2001) identify two types of capitalism, the liberal market economy (LME) and the coordinated market economy (CME). The main dimension along which these two types of economies differ is coordination. In LMEs coordination is achieved through market mechanisms and there is a preference for investing in transferable assets, whereas in CMEs coordination is primarily based on non-market means (i.e., strategic coordination) and investment in specific assets is preferred. However, there are some disadvantages of the approach of Hall and Soskice (2001); it is dichotomous, centers on the firm, and the only dimension it considers is the extent of market coordination (Amable, 2003). Therefore, some scholars have identified more types of capitalism (Amable, Barré, & Boyer, 1997; Jackson, 2002; Rhodes & Van Apeldoorn, 1997; Schmidt, 2002). Nevertheless, these methods generally focus on just one or a few specific institutions. Consequently, Amable (2003) uses a different method that is based on five fundamental institutional areas: product-market competition, labor-market institutions and the wage-labor nexus, corporate governance and the financial sector, social protection, and the education sector. Based on previous characterizations of capitalism and theoretical work, Amable (2003) posits the existence of five

different types of capitalism, which are characterized by particular institutional forms and specific institutional complementarities[8]:

- *The market-based model*, which is similar to the LME of Hall and Soskice (2001). An important element of this model is product-market competition. Firms in market-based economies are more sensitive to adverse shocks as these cannot be entirely absorbed by price adjustments. Hence, quantity adjustments matter, which requires labor-market flexibility as well as quickly reacting, sophisticated financial markets.
- *The social-democratic model* has rather different complementarities. Although some flexibility of the labor force is required due to strong external competitive pressures, employees achieve protection of their specific investments through a combination of modest employment protection, active labor market policies, and a high degree of social protection. In addition, there is a centralized financial system.
- *The Continental European model* has some similarities with the social-democratic model, but has a less developed welfare state and a higher level of employment protection. There is also a centralized financial system. In addition, there are solidaristic wage policies, although they are not as strong as those in the social-democratic model.
- *The Mediterranean model* has less social protection compared to the Continental European model, but it has more employment protection as the level of product-market competition is relatively low and, due to a centralized financial system, there are no short-term profit constraints. However, the workforce has a limited level of skills and education and therefore wages are relatively low.
- *The Asian model* depends to a large extent on the strategies of the large firms and their collaboration with the state and the centralized financial system. There is a relatively high level of employment protection and possibilities for advancement within firms. However, there are fewer possibilities for risk-diversification due to a low level of social protection and a lack of sophisticated financial markets.

To examine whether these theoretical classifications of capitalism are supported by empirical evidence, Amable (2003) conducts an empirical analysis of 21 OECD countries based on various

[8] Note that these five types of capitalism are ideal types; no single economy would perfectly fit the description of any of the types. Nevertheless, a country can be identified as being closest to one of the types and the classification is useful to understand the institutional mechanisms underlying the coherence of the various types of economies. In addition, the classification makes it possible to go beyond the dissimilarities among countries and focus on the common structural traits (Amable, 2003).

indicators regarding the five institutional areas[9]. With the use of cluster analysis based on principal-component analysis, the countries are clustered along the different institutional dimensions and subsequently classified according to the five varieties of capitalism. This paper adopts the classification of these five varieties of capitalism of Amable (2003) since it partially overlaps with existing classifications and it is backed by empirical support.

However, the formerly socialist Eastern European countries are not considered by Amable (2003) and, according to Lane (2005), these countries also cannot be classified in one of the previously defined categories which predominantly concern advanced capitalist countries that have a relatively high degree of market development. These formerly socialist economies differ from Western economies in that they all have higher levels of state control and ownership, lower levels of stock market capitalization, and higher levels of unemployment. The Eastern European countries considered in this paper correspond with two of the subgroups identified by Lane (2005). The first group of countries is closest to the Continental European model, although this group of countries is more state-led. The second group of countries is closest to the market-based model, but is also more state-led and has lower levels of privatization. The exact classification of all 36 countries studied in this paper amongst the seven different varieties of capitalism can be found in Section 3.3.

As argued above, there might be a relation between these different varieties of capitalism and the survival of (social) enterprises. Since there are quite a lot of different types of capitalism, and each has its own specific institutional complementarities, it is rather difficult to predict beforehand whether each particular variety of capitalism will have an influence on the survival of (social) enterprises, and even more difficult to predict whether the influence will be positive or negative. Therefore, it is only hypothesized that there will be a difference in the survival of businesses operating under different varieties of capitalism but no judgment is made beforehand as to the sign of the relationship:

Hypothesis 8A: There is a relation between the type of capitalism existing in the country in which social entrepreneurs are operating and the survival of their enterprise.

Hypothesis 8B: There is a relation between the type of capitalism existing in the country in which commercial entrepreneurs are operating and the survival of their enterprise.

[9] The indicators used in the empirical analysis employ data concerning averages over the 1990s or the second half of this decade.

3. Data and methodology

This section contains an overview and clarification of the dataset, the variables used in the analysis, and the methodology employed to examine the research question.

3.1 Data and sample

The empirical analysis uses data from the Flash Eurobarometer Survey on Entrepreneurship 2009 (No. 283), which contains survey information on the choices, motivations, experiences, and obstacles related to entrepreneurship[10]. The dataset contains information on 26,168 randomly selected respondents from 36 countries[11]. Each of the national samples contains approximately 500 to 1,000 observations and represents the total population above the age of fifteen. One exception is China, where interviews were held with randomly selected individuals above the age of fifteen in 50 cities, and thus the survey represents the urban population. The data was collected in December 2009 and January 2010, predominantly by conducting telephone interviews and occasionally by conducting face-to-face interviews.

The advantages and uniqueness of this dataset are that it allows one to distinguish between social and commercial entrepreneurs and it provides information on the involvement of individuals in the entrepreneurial process. With respect to the latter, it is of interest to make a distinction between those who have started a business that has failed and those who have started a business that is still in existence. The following subsections contain more detailed information on the exact measures used to conduct the empirical analysis.

3.2 Measuring social entrepreneurship and survival

The 26,168 respondents of the survey were asked if they had ever started a business or had taken steps to start one; 6,613 individuals answered "yes" to this question and 19,353 individuals answered "no"[12]. Subsequently, the respondents who had never taken steps to start a business were asked if it had never came to their mind to start a business (to which 12,776 individuals answered

[10] The survey was carried out on behalf of the Directorate-General for Enterprise and Industry of the European Commission.

[11] More specifically, the countries covered by the 2009 Flash Eurobarometer Survey are: the 27 EU member states (Austria, Belgium, Bulgaria, Cyprus, Chez Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and the United Kingdom); two candidate countries: Croatia and Turkey; three EFTA countries: Iceland, Norway, and Switzerland; the United States; and three Asian countries: China, Japan, and South Korea.

[12] Note that 202 individuals did not answer this question.

affirmatively), if they were thinking of starting a business (2,446 individuals), or if they had thought about it and already taken steps to start a business but had then given up (3,414 individuals)[13].

Social versus commercial entrepreneurs

The respondents who were either currently taking steps to start or take over a business, currently own a business, in the past had taken steps to start or take over a business, or in the past had owned a business were asked how important social or ecological motives were in this decision. This question was asked to 10,027 individuals. In total, 5,935 individuals (59%) found it very or rather important to *address an unmet social or ecological need*; these individuals will be classified as social entrepreneurs. In contrast, 3,093 individuals (31%) found it rather not important or not important at all to address an unmet social or ecological need; these individuals will be classified as commercial entrepreneurs[14]. From this information the binary variable *social* was created, which takes a value of 1 if the respondent belongs to the category of social entrepreneurs and takes a value of 0 if the respondent belongs to the category of commercial entrepreneurs. Note that the term "entrepreneur" might sound a little inappropriate at this point, since people who are taking or have taken steps to start a business are also included. However, the next section will clarify how these people will subsequently be excluded from the analysis. Individuals who have owned a business in the past will still be included in the sample; thus, from this point onward whenever the term "entrepreneur" is used it refers to people who currently own a business or have owned a business in the past.

Survival

Individuals who had started a business or are currently starting a business revealed to which of the following groups they belong: 1) Taking steps to start a new business, 2) Started or taken over a business in the last three years and it is still active today, 3) Started or took over a business more than three years ago and it is still active, 4) Once started a business, but currently no longer an entrepreneur since the business has failed, 5) Once started a business, but currently no longer an entrepreneur since the business was sold, transferred or closed. These five different categories can be regarded as different stages of involvement in the entrepreneurial process and have also been referred to as engagement levels (Grilo & Thurik, 2008), since they represent an increasing level of engagement in the entrepreneurial processes (except the last two categories). This question was asked to 6,613 respondents, implying that the 3,414 individuals who merely thought of starting a

[13] 717 individuals did not answer this question because they did not know the answer or did not want to answer.
[14] 999 individuals (10%) did not know the answer to this question or did not want to answer and are therefore excluded from the analysis.

business or gave up are excluded from subsequent analysis. Of these 6,613 individuals, 5,595 individuals also answered the question described in the previous section that classified the individual as either a social or commercial entrepreneur. The complete frequency distribution over all the engagement levels can be found in Table 1.

From this information the binary variable *survival* was constructed. *Survival* is coded 1 if the business was started or taken over 3 years ago and is still active today, which applied to 1,565 entrepreneurs (26%), and 0 if it has failed, which applied to 740 entrepreneurs (12%). The reason why businesses younger than three years are excluded from the analysis is that it has been recognized that if a business fails this usually occurs during the first few years; after approximately three or four years the chances of survival are significantly higher (Coad, 2009; Knaup & Piazza, 2007; Littunen, Storhammar, & Nenonen, 1998). However, it must be noted that only considering older or failed businesses excludes quite a lot of (potential) entrepreneurs from the analysis, which may lead to selection bias. Furthermore, since the dataset is cross-sectional, information is obtained from each individual at one particular point in time. For example, if an individual is classified as an entrepreneur who survived in this dataset, this does not exclude the possibility that this individual had a failed business several years ago. Thus, it must be kept in mind that although this paper talks about "survival", the data that is used for the empirical analysis is cross-sectional and the term "survival" is used to indicate businesses that have been in existence for at least three years as compared to businesses that failed. These issues will be discussed in more detail in the limitations section.

Table 1: Frequency distribution of entrepreneurial engagement levels of social and commercial entrepreneurs

	Frequency	Percentage
Taking steps	1,004	17%
Business <3 years	692	12%
Business >3 years	1,565	26%
Business has failed	740	12%
Business was sold, transferred, or closed	1,576	26%
Dk/na	382	6%
Total	5,959	100%

Source: Flash Eurobarometer Survey on Entrepreneurship 2009 (No. 283).

Note: Observations of respondents not classified as social or commercial entrepreneurs are excluded.

3.3 Factors influencing survival

Human capital

Two indicators of human capital will be included in the analysis, namely education and age. *Education* is a continuous variable that reflects the amount of education that the individual has obtained and is measured by the age when the individual has finished full-time education[15]. *Age* is a continuous variable as well and can be regarded as a broad proxy for business experience. Table 2, at the end of this section, provides an overview of summary statistics of all the independent variables used in the analysis.

Risk attitude

The measure of the entrepreneurs' risk attitude is based on the statement: "In general, I am willing to take risks." Respondents could choose between four answers ranging from strongly disagreeing to strongly agreeing with the statement. From this information the variable *risk taking* was constructed, which takes a value of 1 if respondents strongly disagree with this statement, a value of 2 if respondents disagree, a value of 3 if respondents agree, and a value of 4 if respondents strongly agree.

Growth preferences

The measure of the entrepreneurs' growth preferences is based on the question: *"*Imagine that a friend of yours just started a business. Which advice would you rather give him or her*?"* Respondents could choose between two different answers, namely "try to expand the business quickly" or "grow slowly if at all". The binary variable *growth preferences* is coded 1 if the respondent would advise to expand the business quickly and coded 0 if the respondent would advise to grow slowly.

Willingness to change

The variable *change* measures entrepreneurs' attitude toward changing things they do not like. This variable is based on the statement: "If I see something I do not like, I change it". The variable is given the values 1, 2, 3, and 4, corresponding to whether the respondent strongly disagreed, disagreed, agreed, or strongly agreed with the statement, respectively.

[15] Individuals who responded that they have finished full-time education before the age of 15 were given the minimum value of 15 years of education. Individuals who responded that they have more than 25 years of full-time education were given the maximum value of 25 years of education. Individuals who are still engaged in full-time education are excluded from the analysis.

Financial resources

The variable *lack of financial support* is based on the question: "It is difficult to start one's own business due to a lack of available financial support". *Lack of financial support* can take four different values: it takes a value of 1 if the respondent strongly disagrees with the statement, 2 if the respondent disagrees, 3 if the respondent agrees, and 4 if the respondent strongly agrees.

Start-up information

In addition, another type of start-up barrier is represented by the variable *lack of information. Lack of information* is structured the same way as the variable *lack of financial support.* Thus, there are four possible responses ranging from strongly disagree to strongly agree, and *lack of information* is based on the statement: "It is difficult to obtain sufficient information on how to start a business."

Varieties of capitalism

To examine the association between the different varieties of capitalism and the survival of entrepreneurs, seven dummy variables are constructed that represent the different types of capitalism that were described in detail in the literature review. The exact division of the 36 countries amongst the different varieties of capitalism is as follows, where each dummy variable takes a value of 1 for the countries that belong to this type of capitalism and 0 otherwise:

- *Market-based capitalism*: the United Kingdom and the United States (Amable, 2003). This type of capitalism will serve as the reference category and therefore no dummy will be included for *market-based capitalism* in the regression analysis.
- *Social-democratic capitalism*: Denmark, Finland, and Sweden (Amable, 2003). It is assumed that Iceland also belongs to this group, based on the classification of institutional systems of Esping-Andersen (1999).
- *Continental European capitalism*: Belgium, Germany, France, Ireland, the Netherlands, Austria, Norway, and Switzerland (Amable, 2003). In addition, it is assumed that Luxembourg also belongs to this category since, except for market-based capitalism, all types of capitalism can be denominated geographically[16] (Amable, 2003).
- *Mediterranean capitalism*: Greece, Spain, Italy, and Portugal (Amable, 2003). Moreover, it is assumed that Cyprus, Malta, and Turkey also belong to this type of capitalism.
- *Asian capitalism*: South Korea and Japan (Amable, 2003). It is assumed that China also belongs to this category.

[16] This does not imply that geographically based factors are the most important in defining the different types of capitalism; it is rather an observation in hindsight that after defining the types of capitalism according to the five institutional areas there appears to be a geographical denomination (Amable, 2003).

- *State-led Continental capitalism:* Czech Republic, Estonia, Hungary, Poland, Slovenia, and Slovakia (Lane, 2005).
- S*tate-led market capitalism*: Latvia, Lithuania, Bulgaria, Croatia, and Romania (Lane, 2005).

Control variables

Besides the above-mentioned factors, there are undeniably many other factors associated with the survival of (social) enterprises. Unfortunately, not all of the possible determinants are present in the data or can be measured (for example ability). Nevertheless, some additional factors that might be of influence could be derived from the data and will also be included in the analysis to serve as control variables. First of all, the gender of the entrepreneur might be associated with the survival of the entrepreneur's business. For commercial entrepreneurs, it has been shown that males have a greater probability of successfully continuing their business than females (Bosma et al., 2000; Stam et al., 2010). This might also hold for social entrepreneurs, and therefore the variable *male* is included, which is coded 1 if the entrepreneur is a male and 0 if the entrepreneur is a female.

Secondly, entrepreneurs who are more competitive might also be more successful since previous research has shown that the competitive strategies of commercial entrepreneurs are critical determinants of the performance of their business (Baum, Locke, & Smith, 2001; Kakati, 2003). Therefore, the variable *competitiveness* is included as a control variable. *Competitiveness* is based on the statement: "I like situations in which I compete with others". The values 1, 2, 3, and 4, are given to the variable based on whether the respondent strongly disagreed, disagreed, agreed, or strongly agreed with the statement. Although it must be noted that this variable does not directly measure the competitive strategy of the enterprise, it does measure the entrepreneur's willingness to act competitively; this might be related to survival because it has been recognized that if entrepreneurs are unable to compete it is more likely that their business will fail (Markman & Baron, 2003).

Thirdly, the binary variable *self-employed parents* is included, which takes the value 1 when the respondent has a self-employed father and/or mother, and the value 0 otherwise. Empirical evidence has confirmed that having a self-employed parent increases the probability of business success (Lentz & Laband, 1990) and also increases the chances of business survival (Cooper, 1993; Stam et al., 2010).

Finally, to control for country-specific factors, dummy variables will be included for each of the 36 countries in the models that do not include the variety of capitalism dummies, except for a dummy variable for the United States, which will serve as the reference category.

Table 2: Summary statistics of the independent variables.

Variable	Observations	Type of variable	Mean	Standard Deviation	Minimum	Maximum
Internal factors:						
Education	2,248	Continuous	19.94	3.42	15	25
Age	2,296	Continuous	50.84	12.70	16	86
Risk taking	2,275	Ordinal	2.89	0.79	1	4
Growth preferences	2,170	Binary	0.17	0.38	0	1
Change	2,247	Ordinal	3.13	0.66	1	4
External factors:						
Lack of financial support	2,210	Ordinal	3.16	0.79	1	4
Lack of information	2,213	Ordinal	2.60	0.92	1	4
Varieties of capitalism:						
Market-based	2,305	Binary	0.08	0.28	0	1
Social-democratic	2,305	Binary	0.08	0.27	0	1
Continental European	2,305	Binary	0.19	0.39	0	1
Mediterranean	2,305	Binary	0.21	0.41	0	1
Asian	2,305	Binary	0.16	0.37	0	1
State-led Continental	2,305	Binary	0.19	0.39	0	1
State-led market	2,305	Binary	0.09	0.28	0	1
Control variables:						
Male	2,305	Binary	0.59	0.49	0	1
Competitiveness	2,256	Ordinal	2.74	0.84	1	4
Self-employed parents	2,305	Binary	0.36	0.48	0	1

Source: Flash Eurobarometer Survey on Entrepreneurship 2009 (No. 283).

Note: Only observations that are used in the regression analysis are included, i.e., observations that belong to social or commercial entrepreneurs who either have a business that has existed for longer than three years (1,565 observations) or a business that has failed (740 observations).

3.4 Methodology

In order to examine which factors are related to the survival of (social) enterprises and to test the hypotheses, the following equation will be estimated:

$$Survival_i^* = \beta_0 + \beta_1 Education_i + \beta_2 Age_i + \beta_3 {Age_i}^2 + \beta_4 Risk\ taking_i + \beta_5 Growth\ preferences_i + \beta_6 Change_i + \beta_7 Lack\ of\ financial\ support_i + \beta_8 Lack\ of\ information_i + \beta_9 Social\text{-}democratic_i + \beta_{10} Continental\ European_i + \beta_{11} Mediteranian_i + \beta_{12} Asian_i + \beta_{13} State\text{-}led\ Continental_i + \beta_{14} State\text{-}led\ market_i + \beta_{15} Male_i + \beta_{16} Competitiveness_i + \beta_{17} Self\text{-}employed\ parents_i + \varepsilon_i \quad (1)$$

where $i = 1, \dots, n$ and ε_i represents a random error.

The above equation shows the full model including the varieties of capitalism. To examine whether there is a non-linear relationship between *age* and *survival*, a quadratic term of the variable *age*

(age²) is included in this equation. In the regression analysis *education* and *age* will be divided by 10 and *age²* by 10^2, to avoid coefficients that are very small and therefore more difficult to interpret. In addition, several variations of equation (1) will be estimated, including only the internal factors (*education, age, age², risk taking, growth preferences, change*), only the external factors (*lack of financial support, lack of information*), or only the *variety of capitalism* dummies. For the models that do not include the variety of capitalism dummies, country dummies will be included instead to control for country-specific effects. Furthermore, the full model will be estimated without the varieties of capitalism but with country dummies, to examine whether the varieties of capitalism approach adds additional information compared to country-specific effects.

The dependent variable in equation (1), *survival**, can also be thought of as a continuous latent dependent variable which represents the propensity to survive. That is, some entrepreneurs who own a business might be rather likely to close down their business very soon whereas others might be very profitable and are quite certain to remain in business for a very long time. However, it can only be observed whether an entrepreneur has a business older than three years or a business that has failed, which is captured by the binary variable *survival* (which either takes the value 1 or 0). For binary variables it is not advisable to estimate an Ordinary Least Squares (OLS) regression since OLS does not take into account the fact that the dependent variable can either take the value 0 or 1 and that the predicted probability should stay within this range, i.e., OLS could theoretically predict a negative probability or a probability larger than 1. This limitation can be overcome through the use of a binary logit model. A logit model fits a curve that has an S-shape, instead of a straight line. In a logit model the error term, ε_i, is assumed to follow a logistic distribution with a mean of zero and a variance of $\pi^2/3$, which leads to the following equation for the binary logit model[17]:

$$\Pr(y_i = 1 \mid X_i) = \frac{\exp(X_i'\beta)}{1+\exp(X_i'\beta)} \qquad (2)$$

where y_i represents the dependent variable (*survival*) and $X_i'\beta$ represents the estimated regression equation (the right-hand side of equation (1)).

The magnitude of the coefficients of binary logit models cannot be directly observed from the regression results, since in non-linear models the effect of a change in any of the independent variables on the dependent variable depends on the particular values that all of the independent

[17] Similarly, one could use a probit model as well, which also fits an S-shaped curve to the data. The difference between the logit and probit model is the distribution of the error term, ε_i, which is assumed to be distributed normally with a variance of 1 (and also a mean of zero) for the probit model. Nevertheless, for binary models the conclusions of the logit and probit model are usually the same (Long, 1997).

variables take. Therefore, average marginal effects will be computed in order to be able to interpret the magnitude of the effects[18]. The marginal effects will be estimated with standard errors that are robust to heteroskedasticity. For the models that include country dummies, the heteroskedastic-robust standard errors will be clustered by country, to adjust for correlations between entrepreneurs in the same country.

To examine whether the explanatory variables are related to the survival of social enterprises differently, as compared to the survival of commercial enterprises, interaction terms could be included between each of the explanatory variables and the variable *social.* However, it has been argued that the interpretation of interaction terms that is valid for linear regression models is not valid for non-linear models (Norton, Wang, & Ai, 2004)[19]. Furthermore, interaction terms to compare two separate groups can only be validly included in a logit model if the unobserved variation for both groups is the same, which is usually not the case (Hoetker, 2007). Therefore, a different approach is chosen, namely to separately estimate the models for social and commercial entrepreneurs, and subsequently compare the results. In addition, the models will be estimated for the complete sample, i.e., social and commercial entrepreneurs simultaneously, and with *social* as an additional explanatory variable in order to examine whether the mere fact of having a social enterprise is related to the chances of survival.

To compare the full model with country dummies to the full model with the variety of capitalism dummies, first of all, an LR test will be performed to examine whether the coefficients in each of the models are jointly significant. The LR test uses the values of the log-likelihood of a full model (i.e., a model with all explanatory variables included) and a restricted model with only an intercept, and determines if there is a statistically significant difference between these two values. In addition, several measures of goodness of fit that can be applied to binary logit models will be computed since it has been recognized that there is no direct alternative to the R^2 that is often reported for OLS models (Hoetker, 2007).

First, McFadden's (pseudo) R^2 will be estimated, which compares a model with only an intercept (i.e., a restricted model) to a model where all variables are included (i.e., a full model) through a

[18] Average marginal effects imply that for each individual the marginal effect is calculated (i.e., where the independent variables take the particular values for that entrepreneur), and subsequently the average of the marginal effects of all individuals is taken.

[19] More specifically, Norton et al. (2004) argue that the marginal effects might have a different sign for different observations, and that the significance of the interaction terms cannot be inferred from the regression output. They have developed an alternative approach for computing interaction effects in logit models, but this approach only allows for one interaction term in the regression.

comparison of the log-likelihood for each model. McFadden's R^2 ranges from 0 to 1 and is calculated as[20]:

$$R^2_{McF} = 1 - \frac{\ln \hat{L}(M_{Full})}{\ln \hat{L}(M_{Intercept})} \quad (3)$$

Because McFadden's R^2 never decreases, and usually increases, when adding additional variables to the model, it might be better to look at the adjusted McFadden's R^2 which takes into account the number of parameters (K^*), and is computed with the following equation:

$$\bar{R}^2_{McF} = 1 - \frac{\ln \hat{L}(M_{Full}) - K^*}{\ln \hat{L}(M_{Intercept})} \quad (4)$$

Another measure of goodness of fit that can be applied to binary logit models is Efron's R^2, which measures the percentage of variance explained by non-linear models. For binary outcomes it defines $\hat{y} = \hat{\pi} = \widehat{Pr}(y = 1 \mid \mathbf{x})$ and it is computed as:

$$R^2_{Efron} = 1 - \frac{\sum_{i=1}^{N} (y_i - \hat{\pi}_i)^2}{\sum_{i=1}^{N} (y_i - \bar{y})^2} \quad (5)$$

The final measure of goodness of fit that will be estimated is the count R^2, which measures the proportion of correct predictions that the model makes and is computed as:

$$R^2_{Count} = \frac{1}{N} \sum_j n_{jj} \quad (6)$$

where n_{jj} represents the amount of accurate predictions for outcome *j*. One limitation of this measure is that if one would estimate the same outcome each time (i.e., predicting that the entrepreneur's business survives) one would already guess the right outcome more than half of the time (around 65% of the time for social entrepreneurs and around 72% of the time for commercial entrepreneurs). Therefore, the adjusted count R^2 will also be computed, which takes this limitation into account by looking instead at the proportion of correct guesses beyond the number one would predict by always guessing the value of the largest marginal. The adjusted count R^2 is defined as:

$$R^2_{AdjCount} = \frac{\sum_j n_{jj} - \max_r(n_{r+})}{N - \max_r(n_{r+})} \quad (7)$$

where n_{r+} represents the marginal for row *r.*

[20] The formulas for the measures of fit stated in this section were obtained from Long and Freeze (2006).

4. Results

To examine which factors are related to the survival of social enterprises and whether these factors are different for commercial enterprises, this section contains some bivariate as well as multivariate statistical analysis.

4.1 Bivariate analysis

Table 3 shows the correlation coefficients (Spearman's rho) between *survival* and all of the explanatory variables used in the analysis. The correlation coefficients are computed separately for social and commercial entrepreneurs, and for the complete sample as well.

Table 3: Correlation coefficients (Spearman's rho) between *survival* and the explanatory variables.

	Social entrepreneurs	Commercial entrepreneurs	Both
Social	-	-	-0.06 **
Internal factors:			
Education	0.10 ***	0.14 ***	0.12 ***
Age	0.01	0.03	0.02
Risk taking	0.04	0.09 **	0.06 ***
Growth preferences	-0.05 *	-0.06 *	-0.06 **
Change	0.09 ***	0.05	0.07 ***
External factors:			
Lack of financial support	-0.12 ***	-0.11 ***	-0.12 ***
Lack of information	-0.11 ***	-0.12 ***	-0.12 ***
Varieties of capitalism:			
Market-based	0.06 *	0.06	0.06 **
Social-democratic	0.11 ***	0.07 *	0.09 ***
Continental European	0.06 **	0.10 ***	0.08 ***
Mediterranean	0.01	-0.06 *	-0.02
Asian	-0.12 ***	-0.23 ***	-0.15 ***
State-led Continental	0.00	0.08 **	0.04 *
State-led market	-0.05 *	-0.09 **	-0.07 ***

*** denotes significance at 1%; ** denotes significance at 5%; * denotes significance at 10%.

Source: Flash Eurobarometer Survey on Entrepreneurship 2009 (No. 283).

Notes: The correlation coefficients are based on a sample of 1,135 observations for social entrepreneurs, 755 for commercial entrepreneurs, and 1,890 for both.

For social entrepreneurs, as expected, the internal factors *education* and *change* show a significant positive correlation with *survival*. In contrast to expectations, however, *survival* is significantly negatively correlated with *growth preferences*. *Survival* shows no significant correlation with *age* or with *risk taking.* For commercial entrepreneurs, the same internal factors are significant, except that

in this case *risk taking* is also significantly positively correlated with *survival*, whereas *change* is not significantly correlated with *survival.*

With respect to the external factors, it can be observed that for both social and commercial entrepreneurs, as expected, both *lack of financial support* and *lack of information* show a significant negative correlation with *survival.* Table 3 also shows that, for both social and commercial entrepreneurs, almost all varieties of capitalism appear to be significantly correlated with *survival.*

Furthermore, it can also be observed from Table 3 that there is a significant negative correlation between being a *social* entrepreneur and *survival.* Overall, it appears that the correlations in Table 3 are rather low. This indicates that although the relations between most of the explanatory variables and *survival* appear to be significant they are not very strong. In other words, each of the individual factors does not seem to be related to survival to a strong degree. Thus, as expected, the survival of (social) enterprises is not strongly related to one or a few specific factors, but instead depends on many different factors. Additionally, measurement error may be another reason why the correlation coefficients are low since the constructed variables are all based on survey questions.

To check if multicollinearity might be a problem during the regression analysis, correlation coefficients have also been computed between each of the explanatory variables. There is no evidence of multicollinearity since most of the correlation coefficients do not exceed 0.10, although there are a few higher values with the highest correlation coefficient being 0.32 (between *competitiveness* and *risk taking* for commercial entrepreneurs).

Table 4 shows the distribution of entrepreneurs whose enterprise has survived at least three years compared to the distribution of entrepreneurs whose enterprise had failed for each of the explanatory variables for social as well as commercial entrepreneurs. It can be observed from the table that, for both social and commercial entrepreneurs, those with more years of *education* have a higher percentage of survival[21]. There is significant evidence that *education* and *survival* are not independent of each other, which is shown by the Pearson χ^2 statistic (which is 19.31 for social entrepreneurs and 20.95 for commercial entrepreneurs, both significant at the 1% level). In addition, Table 4 indicates that there is indeed a concave relation between *age* and *survival*, for both social and commercial entrepreneurs. The largest percentage of entrepreneurs with surviving enterprises is in the age category 36 – 45 years. Moreover, there is significant evidence that

[21] For convenience when constructing this table, the variable *education* has been divided into three categories. The same applies to the variable *age* which has been divided into five categories.

Table 4: Percentage of social and commercial entrepreneurs whose enterprise has survived more than three years compared to those whose enterprise has failed, across the explanatory variables.

		Social entrepreneurs				Commercial entrepreneurs			
		Failed	Business >3 years			Failed	Business >3 years		
Internal factors:									
Education (age when finished)	0 – 15	45.25	54.75	χ^2	19.31	39.29	60.71	χ^2	20.95
	16 – 19	36.17	63.83	P-value	0.000	33.05	66.95	P-value	0.000
	≥ 20	28.64	71.36			21.51	78.49		
Age	15 – 25	59.38	40.63	χ^2	13.76	60.00	40.00	χ^2	9.84
	26 – 35	41.13	58.87	P-value	0.008	34.09	65.91	P-value	0.043
	36 – 45	30.99	69.01			25.45	74.55		
	46 – 55	32.43	67.57			27.49	72.51		
	≥ 56	34.88	65.12			28.17	71.83		
In general willing to take risks	Strongly disagree	41.67	58.33	χ^2	4.49	54.29	45.71	χ^2	17.25
	Disagree	37.90	62.10	P-value	0.213	28.70	71.30	P-value	0.001
	Agree	33.53	66.47			29.57	70.43		
	Strongly agree	31.79	68.21			20.65	79.35		
Growth preferences	Expand quickly	41.05	58.95	χ^2	4.32	33.33	66.67	χ^2	1.77
	Grow slowly	33.83	66.17	P-value	0.038	27.88	72.12	P-value	0.183
Willingness to change things	Strongly disagree	42.11	57.89	χ^2	11.99	40.00	60.00	χ^2	1.51
	Disagree	44.71	55.29	P-value	0.007	31.90	68.10	P-value	0.679
	Agree	34.38	65.62			28.86	71.14		
	Strongly agree	29.84	70.16			27.05	72.95		
External factors:									
Lack of financial support	Strongly disagree	29.41	70.59	χ^2	17.67	17.95	82.05	χ^2	12.44
	Disagree	21.47	78.53	P-value	0.001	25.48	74.52	P-value	0.006
	Agree	34.33	65.67			25.44	74.56		
	Strongly agree	39.19	60.81			35.76	64.24		
Lack of information	Strongly disagree	27.34	72.66	χ^2	13.67	20.97	79.03	χ^2	15.23
	Disagree	30.00	70.00	P-value	0.003	24.57	75.43	P-value	0.002
	Agree	37.89	62.11			30.91	69.09		
	Strongly agree	40.60	59.40			39.31	60.69		
Varieties of capitalism	Market-based	26.26	73.74	χ^2	34.47	23.66	76.34	χ^2	65.94
	Social-democratic	17.86	82.14	P-value	0.000	25.81	74.19	P-value	0.000
	Continental European	27.23	72.77			19.28	80.72		
	Mediterranean	32.84	67.16			32.08	67.92		
	Asian	44.08	55.92			63.01	36.99		
	State-led continental	37.75	62.25			22.32	77.68		
	State-led market	41.27	58.73			42.67	57.33		

Source: Flash Eurobarometer Survey on Entrepreneurship 2009 (No. 283).

Notes: These figures are based on a sample of 1,365 social entrepreneurs and 940 commercial entrepreneurs.

age and *survival* are not independent of each other (χ^2 = 13.76 for social entrepreneurs, which is significant at the 1% level, and χ^2 = 9.84 for commercial entrepreneurs, which is significant at the 5% level). The willingness to take *risks* is only significantly independent from *survival* for commercial entrepreneurs (χ^2 = 17.25, significant at the 1% level). Although the distribution over the four categories is not entirely as expected, at the two extreme categories the result is as expected since 45.71% of the entrepreneurs who strongly disagree that they are willing to takes risks have a business that has survived compared to 79.35% of those who strongly agree. *Growth preferences* are only significantly independent from *survival* for social entrepreneurs (χ^2 = 4.32, significant at the 5% level). Contrary to the expectations, but in accordance with the correlation analysis, the table shows that the percentage of social enterprises that survived is larger for entrepreneurs who would advise to growth slowly (66.17%) than for those who would advise to expand quickly (58.95%). As expected, the willingness to *change* things is only significantly related to the survival of social enterprises (χ^2 = 11.99, significant at the 1% level) and it can be observed from Table 4 that of the social entrepreneurs who agree to be willing to change a larger percentage have a business that has survived compared to those who disagree.

With respect to the external factors, there is significant evidence that a *lack of financial support* is not independent from *survival* (χ^2 = 17.67 for social entrepreneurs and χ^2 = 12.44 for commercial entrepreneurs, both significant at the 1% level). Although the pattern is not exactly as expected, it can be observed that for social as well as commercial entrepreneurs the percentage of survival is lower for those who strongly agree that there is a lack of financial support (60.81% and 64.24%, respectively) than for those who strongly disagree (70.59% and 82.05%, respectively). The perception of a *lack of information* also significantly differs among those who have a business that survived versus those who had a failed business for both social and commercial entrepreneurs (χ^2 = 13.67 and χ^2 = 15.23 respectively, both significant at the 1% level). As expected, entrepreneurs who (strongly) agreed that there was a *lack of information* have a lower percentage of survival than those who (strongly) disagreed.

Finally, Table 4 also shows significant evidence that the different *varieties of capitalism* and *survival* are not independent of each other, (χ^2 = 34.47 for social entrepreneurs and χ^2 = 65.94 for commercial entrepreneurs, both significant at the 1% level). For both social and commercial entrepreneurs, the lowest percentage of enterprises that survived (55.92% and 36.99%, respectively) operate in a country classified as *Asian capitalism*. For social entrepreneurs, the largest percentage of enterprises that survived operated under *social-democratic capitalism* (82.14%),

whereas for commercial entrepreneurs the highest percentage of survival occurred under *Continental European capitalism* (80.72%).

A remarkable conclusion that can be drawn from Table 4 is that in most cases, for the same category of one of the explanatory variables (for example, for the same education level), the percentage of survival is higher for commercial entrepreneurs than for social entrepreneurs. Furthermore, Table 5 shows significant evidence that being a *social* entrepreneur is not independent from *survival* since the Pearson χ^2 statistic is 9.40 and significant at the 1% level. More specifically, 71.49% of the commercial enterprises have survived compared to 65.42% of the social enterprises.

Table 5: Percentage of social and commercial entrepreneurs whose enterprise has survived more than three years compared to those whose enterprise has failed.

	Failed	Business >3 years		
Commercial	28.51	71.49	Pearson χ^2	9.40
Social	34.58	65.42	P-value	0.002

Source: Flash Eurobarometer Survey on Entrepreneurship 2009 (No. 283).

Notes: This table is based on a sample of 1,365 social entrepreneurs and 940 commercial entrepreneurs.

The bivariate analysis provides evidence that many of the hypothesized factors indeed appear to be significantly related to the survival of (social) enterprises. Moreover, although some of the relationships are similar for social and commercial entrepreneurs, there also appear to be some differences between the factors that are relevant for the survival of social as compared to commercial enterprises.

Although this bivariate analysis provides some useful hints at the results, one limitation is that it only examines the relation between one of the independent variables with survival, i.e., information is provided about the separate relationship of each predictor with survival. Therefore, the next section contains multivariate regression analysis, which also takes into account the effects of all other variables, i.e., it provides information about the relationship between each predictor and survival that is independent and unique from the other variables included in the model.

4.2 Multivariate analysis

Table 6 shows the average marginal effects of estimations of binary logit models for social entrepreneurs, with *survival* as the dependent variable. The table shows five different models. Model (1) examines the relation between the internal factors and survival, thereby testing Hypotheses 1 through 5. Model (2) tests the relation between the external factors and survival, i.e., Hypotheses 6 and 7. Model (3) tests the relation between the varieties of capitalism and survival,

thus testing Hypothesis 8. Model (4) is a combination of the first two models, without the varieties of capitalism but with country dummies included instead. Finally, model (5) includes both internal and external factors and, instead of country dummies, this time dummies are included for the different varieties of capitalism, to examine whether these add some explanatory power compared to the country-specific effects. All models also contain several control variables, to control for other factors that might be related to the survival of enterprises, such as gender, the competitiveness of the entrepreneur and whether the entrepreneur has at least one self-employed parent.

Table 6: Marginal effects of binary logit models with *survival* as the dependent variable, for social entrepreneurs.

	Model (1)		Model (2)		Model (3)		Model (4)		Model (5)	
Internal factors:										
Education	0.100**	(0.051)					0.088	(0.055)	0.092**	(0.044)
Age	0.279***	(0.075)					0.253***	(0.078)	0.268***	(0.071)
Age^2	-0.028***	(0.008)					-0.025***	(0.008)	-0.026***	(0.007)
Risk taking	0.019	(0.019)					0.012	(0.018)	0.006	(0.018)
Growth preferences	-0.021	(0.059)					-0.016	(0.062)	-0.042	(0.037)
Change	0.038**	(0.018)					0.049***	(0.017)	0.042**	(0.021)
External factors:										
Lack of financial support			-0.050***	(0.019)			-0.049**	(0.020)	-0.059***	(0.020)
Lack of information			-0.032**	(0.016)			-0.027	(0.017)	-0.029*	(0.016)
Varieties of capitalism:										
Social-democratic					0.084	(0.072)			0.129	(0.080)
Continental European					-0.026	(0.063)			-0.035	(0.069)
Mediterranean					-0.084	(0.059)			-0.066	(0.066)
Asian					-0.210***	(0.060)			-0.178***	(0.069)
State-led Continental					-0.129**	(0.064)			-0.072	(0.070)
State-led market					-0.147**	(0.070)			-0.137*	(0.075)
Control variables:										
Male	0.023	(0.029)	0.016	(0.029)	0.047*	(0.027)	0.016	(0.031)	0.030	(0.028)
Competitiveness	0.017	(0.021)	0.012	(0.020)	-0.014	(0.016)	0.013	(0.020)	-0.004	(0.018)
Self-employed parents	0.092***	(0.031)	0.083**	(0.034)	0.087***	(0.028)	0.093***	(0.034)	0.096***	(0.029)
Country dummies	Yes		Yes		No		Yes		No	
Observations	1,189		1,243		1,329		1,122		1,135	
Log likelihood	-692		-731		-835		-646		-684	
Pseudo R^2	0.098		0.093		0.028		0.108		0.063	

*** denotes significance at 1%; ** denotes significance at 5%; * denotes significance at 10%.

Source: Flash Eurobarometer Survey on Entrepreneurship 2009 (No. 283).

Notes: The dependent variable is *survival*, which takes the value 1 if the respondent started or took over a business more than three years ago that is still active; and 0 if the respondent once started a business that has failed.
Robust standard errors are in parentheses. For model (1), (2), and (4) the standard errors are clustered by country.
For the variety of capitalism dummies, the reference category is *market-based capitalism*.
The variables *education* and *age* are divided by 10 and age^2 by 10^2.

Model (1) in Table 6 shows that *education* is significantly positively related to *survival*, which is in line with Hypothesis 1A. More specifically, if education increases by 10 years the probability of survival increases by 10 percentage points (i.e., 1 percentage point for each year). In addition, it appears that there is a concave relationship between *age* and *survival*, with the turning point at approximately 50 years[22]. Hence, Hypothesis 2A is also supported. The willingness to take *risks* and *growth preferences* are not significant. Thus, Hypotheses 3A and 4A are not supported. The willingness to *change* things is significantly related to *survival*, and the marginal effect shows that it increases the probability of survival by 3.8 percentage points. Hence, Hypothesis 5A is also supported.

Model (2) in Table 6 shows that both a *lack of financial* support and a *lack of information* are significantly negatively related to *survival*. More specifically, a perceived lack of financial support decreases the probability of survival by 5.0 percentage points and a perceived lack of information decreases the probability of survival by 3.2 percentage points. Thus, Hypotheses 6A and 7A are also supported.

In addition, model (3) shows that *Asian, state-led Continental,* and *state-led market capitalism,* are all significantly negatively related to *survival*, compared to *market-based capitalism.* In accordance with the bivariate analysis, the largest negative marginal effect is observed for *Asian capitalism,* where the probability of survival is 21.0 percentage points lower as compared to *market-based capitalism.* For *state-led Continental* and *state-led market capitalism,* the probability of survival is 12.9 percentage points and 14.7 percentage points lower, respectively, compared to *market-based capitalism.* Hence, Hypothesis 8A is also supported.

Although most of the marginal effects of the internal and external factors are somewhat smaller in models (4) and (5), the conclusions regarding the sign and significance remain the same, except for *education* and *lack of information* which are not significant anymore in model (4) and *state-led Continental capitalism* which is not significant anymore in model (5). It can also be observed from Table 6 that in all five models having at least one *self-employed parent* is significantly positively related to *survival.* Social entrepreneurs with at least one self-employed parent are around 9 percentage points more likely that their business survives than social entrepreneurs without self-employed parents.

[22] This can be computed by setting the first order derivative of the estimated regression equation with respect to *age* equal to zero. The estimated regression equation shows a coefficient of 1.403 for *age* (divided by 10) and -0.140 for age^2 (divided by 10^2). Hence, taking the first order derivative with respect to *age* and setting this equal to zero gives $0.1403 = 0.0028age$, which can be solved for $age = 50.11$.

Table 7 shows the marginal effects of the binary logit models for commercial entrepreneurs. It appears that, in this case, there is also a significant positive relation between *education* and *survival*, which supports Hypothesis 1B. More specifically, if an entrepreneur obtains 10 more years of education the probability that his enterprise survives increases by 19.9 percentage points (i.e., about 2 percentage points for each year), which is about twice as large as the marginal effect that was estimated for social entrepreneurs. Neither *age* nor age^2 are significant in model (1), suggesting that Hypothesis 2B is not supported. *Risk taking* appears to have a positive relation with *survival,*

Table 7: Marginal effects of binary logit models with *survival* as the dependent variable, for commercial entrepreneurs.

	Model (1)		Model (2)		Model (3)		Model (4)		Model (5)	
Internal factors:										
Education	0.199***	(0.053)					0.172***	(0.058)	0.138***	(0.049)
Age	0.115	(0.080)					0.137*	(0.083)	0.147*	(0.084)
Age^2	-0.010	(0.007)					-0.013*	(0.007)	-0.014*	(0.008)
Risk taking	0.040*	(0.024)					0.039	(0.024)	0.039*	(0.023)
Growth preferences	-0.004	(0.040)					-0.014	(0.040)	-0.054	(0.043)
Change	-0.004	(0.028)					-0.001	(0.030)	-0.000	(0.025)
External factors:										
Lack of financial support			-0.033	(0.022)			-0.028	(0.021)	-0.043*	(0.022)
Lack of information			-0.018	(0.017)			-0.001	(0.019)	-0.011	(0.019)
Varieties of capitalism:										
Social-democratic					-0.036	(0.067)			-0.004	(0.076)
Continental European					0.050	(0.053)			0.015	(0.062)
Mediterranean					-0.081	(0.060)			-0.070	(0.068)
Asian					-0.411***	(0.073)			-0.376***	(0.087)
State-led Continental					0.036	(0.053)			0.037	(0.060)
State-led market					-0.141*	(0.077)			-0.141*	(0.083)
Control variables:										
Male	0.056	(0.036)	0.061	(0.037)	0.086***	(0.031)	0.045	(0.036)	0.057*	(0.033)
Competitiveness	0.024	(0.019)	0.023	(0.015)	0.018	(0.018)	0.025	(0.018)	0.018	(0.020)
Self-employed parents	0.081**	(0.033)	0.075**	(0.032)	0.066**	(0.030)	0.086***	(0.032)	0.088***	(0.033)
Country dummies	Yes		Yes		No		Yes		No	
Observations	801		842		927		749		755	
Log likelihood	-409		-436		-515		-383		-409	
Pseudo R^2	0.150		0.135		0.067		0.152		0.099	

*** denotes significance at 1%; ** denotes significance at 5%; * denotes significance at 10%.

Source: Flash Eurobarometer Survey on Entrepreneurship 2009 (No. 283).

Notes: The dependent variable is *survival*, which takes the value 1 if the respondent started or took over a business more than three years ago that is still active; and 0 if the respondent once started a business that has failed.
Robust standard errors are in parentheses. For model (1), (2), and (4) the standard errors are clustered by country.
For the variety of capitalism dummies, the reference category is *market-based capitalism*.
The variables *education* and *age* are divided by 10 and age^2 by 10^2.

hence Hypothesis 3B is supported. Commercial entrepreneurs who are willing to take risks have a 4 percentage points greater probability that their business survives. The variables *growth preferences* and *change* are not significant; thus, Hypothesis 4B is not supported and Hypothesis 5B is supported.

With respect to the external factors, model (2) shows that for commercial entrepreneurs neither a *lack of financial support* nor a *lack of information* is significantly related to *survival,* which is in contrast to Hypotheses 6B and 7B.

Model (3) shows that *Asian capitalism* and *state-led market* capitalism are both significantly negatively related to *survival.* For commercial entrepreneurs operating in a country classified as *Asian capitalism*, the probability that their business survives is 41.1 percentage points lower than for commercial entrepreneurs operating in a country classified as *market-based capitalism* (which is about twice as large as the marginal effect estimated for social entrepreneurs). For entrepreneurs operating under *state-led market capitalism* the probability of *survival* is 14.1 percentage points lower compared to *market-based capitalism* (which is similar to the marginal effect that was observed for social entrepreneurs).

Although most of the conclusions regarding the significance of the variables appear to be similar in model (4) and (5), some differences can be observed. In model (4) as well as model (5) *age* and age^2 appear to be significant, providing some support that there is indeed a concave relationship between *age* and *survival* for commercial entrepreneurs. The turning point occurs at the age of 52 years in model (4) and at the age of 55 years in model (5), which is somewhat higher than for social entrepreneurs. In model (4), *risk taking* is no longer significant, whereas in model (5) a *lack of financial support* suddenly appears to be significant. However, it should be noted that in this case all differences that can be observed between model (4) and (5) and the other models concern variables that are only significant at the 10% level. Therefore, the differences might appear to be more substantial than they actually are. Finally, Table 7 shows that having *self-employed parents* is significantly positively related to *survival* (with the probability of survival about 7 to 9 percentage points higher for entrepreneurs who have at least one self-employed parent).

A summary of the regression results and conclusions regarding the hypotheses can be found in Table 8. These results will be clarified and interpreted in more detail in Chapter 5. Furthermore, Chapter 5 will pay more attention to the differences between the results for social and commercial entrepreneurs.

Table 8: Summary of the regression results.

	Social entrepreneurs		Commercial entrepreneurs	
	Regression results:	*Conclusion w.r.t. hypothesis:*	*Regression results:*	*Conclusion w.r.t. hypothesis:*
Internal factors:				
Education	Partly +	H1A partly supported	+	H1B supported
Age	Concave	H2A supported	Partly concave	H2B partly supported
Risk taking	0	H3A not supported	Partly +	H3B partly supported
Growth preferences	0	H4A not supported	0	H4B not supported
Change	+	H5A supported	0	H5B supported
External factors:				
Lack of financial support	-	H6A supported	Partly -	H6B partly supported
Lack of information	Partly -	H7A partly supported	0	H7B not supported
Varieties of capitalism:				
Social-democratic	0	H8A supported	0	H8B supported
Continental European	0		0	
Mediterranean	0		0	
Asian	-		-	
State-led Continental	Partly -		0	
State-led market	-		-	

Notes: This table provides a summary of the estimated regression results. "+" implies that an increase in the corresponding variable increases the probability of survival, "-" implies that an increase in the corresponding variable decreases the probability of survival, and "0" implies that an increase in the corresponding variable did not significantly influence the probability of survival. For some variables, the significance was not the same across the five models, and therefore these variables are classified as "partly" + or -.
The dependent variable is *survival*, which takes the value 1 if the respondent started or took over a business more than three years ago that is still active; and 0 if the respondent once started a business that has failed.
For the variety of capitalism dummies, the reference category is *market-based capitalism*.

Estimates of the marginal effects of the country dummies that were included in model (4) for social entrepreneurs, commercial entrepreneurs and the complete sample can be found in Table 11 in the Appendix. It can be observed from Table 11 that for social entrepreneurs the largest positive marginal effect occurs for Iceland, where the probability of the survival of social enterprises is 27.9 percentage points higher than in the United States (significant at the 1% level). In contrast, the largest negative marginal effect occurs for Denmark, where the chance that a social enterprise survives is 27.3 percentage points lower than in the United States (significant at the 1% level). Other large marginal effects are found for Romania (-26.6), South Korea (-26.3), China (-26.2), Belgium (-25.2) and Finland (23.2), which are all significant at the 1% level. The table shows that many of the countries have significantly different probabilities of survival than the United States (the only countries which show no significant difference are France, Turkey, Latvia, Austria, the Netherlands, and the United Kingdom). It can also be observed from Table 11 that some countries that are classified to have the same type of capitalism appear to have markedly different marginal effects.

For example, although Denmark and Finland are both classified under social-democratic capitalism, one has a rather large positive marginal effect and the other a rather large negative marginal effect. Within each of the categories of the varieties of capitalism, except market-based and state-led market capitalism, there is at least one country that has a significant opposite effect compared to the overall group. The implications of these finding will be discussed in more detail in the discussion in Chapter 5.

For commercial entrepreneurs some of the same countries appear to have large marginal effects, though some differences can also be observed. The largest marginal effects for commercial entrepreneurs are observed for China (-37.7), Romania (-31.8), Belgium (-27.8), Italy (23.8), and South Korea (-20.7), which are all significant at the 1% level. In this case, Bulgaria, Latvia, Finland, Spain, Sweden, Japan, Portugal, and Lithuania show no significant difference with the United States. Again, there appear to be significant differences between countries that are classified under the same variety of capitalism.

To examine whether the varieties of capitalism approach yields any additional insights as compared to country-specific effects, first an LR-test has been performed to test whether the coefficients are jointly significant in each of the models. Table 9 shows that for both social and commercial entrepreneurs the country dummies in model (4) are jointly significant at the 1% level. The variety of capitalism dummies in model (5) are also jointly significant at the 1% level. Thus, it appears that the country dummies as well as the variety of capitalism dummies are significantly related to the survival of social as well as commercial enterprises.

To further compare the two models, several measures of fit have been computed. In the regression output (Table 6 and Table 7) McFadden's R^2 (also referred to as the Pseudo R^2) was already shown. These values differ slightly for model (5) in Table 9 because to make the measures of fit comparable, the observations that were excluded from model (4), because the outcome did not vary for that particular country, have also been excluded from model (5). Table 9 shows that for social entrepreneurs McFadden's R^2 is 0.108 for model (4) and 0.061 for model (5). For commercial entrepreneurs it was 0.152 for model (4) and 0.100 for model (5). Thus, according to McFadden's R^2 one would prefer the model with country dummies to the model with variety of capitalism dummies. However, one disadvantage of McFadden's R^2 is that it never decreases, and usually increases, when more variables are added to the model. Therefore, it might be better to look at the adjusted version of this measure, which is also shown in Table 9. For social entrepreneurs, the adjusted McFadden's R^2 is 0.043 for model (4) and 0.036 for model (5), implying that the model with

the country dummies is still preferred, although the difference has become less pronounced. For commercial entrepreneurs, the adjusted McFadden's R^2 is 0.048 for model (4) and 0.060 for model (5), implying that, in this case, it is actually the model with the variety of capitalism dummies that is preferred.

Table 9: Measures of fit to compare the model with country-specific effects to the model with varieties of capitalism.

	Social Entrepreneurs		Commercial entrepreneurs	
	Model (4) Country dummies	Model (5) Varieties of capitalism	Model (4) Country dummies	Model (5) Varieties of capitalism
LR χ^2	156.72	88.24	137.50	90.21
P-value	0.000	0.000	0.000	0.000
McFadden's R^2 (Pseudo R^2)	0.108	0.061	0.152	0.100
Adjusted McFadden's R^2	0.043	0.036	0.048	0.060
Efron's R^2	0.137	0.081	0.183	0.121
Count R^2	0.699	0.675	0.757	0.741
Adjusted Count R^2	0.133	0.064	0.165	0.110

Source: Flash Eurobarometer Survey on Entrepreneurship 2009 (No. 283).

Notes: These figures are based on the regression analysis shown in Table 6 and Table 7. To make the measures of fit for both models comparable, the observations that were excluded from model (4), because the outcome did not vary for that particular country, are excluded from model (5) as well. Hence, the measures of fit are based on 1,122 observations for social entrepreneurs and 749 for commercial entrepreneurs.
For the variety of capitalism dummies, the reference category is *market-based capitalism*.
For the country dummies, the reference category is the United States.

For both social and commercial entrepreneurs, Efron's R^2 is larger for model (4) than for model (5) (13.7% versus 8.1% and 18.3% versus 12.1%, respectively). Finally, Table 9 shows that the percentage of correct predictions that the models make (Count R^2), is also slightly higher for model (4) than for model (5) for both social and commercial entrepreneurs (69.9% versus 67.5% and 75.7% versus 74.1%, respectively). However, it might be better to look at the adjusted Count R^2, which shows the proportion of correct predictions beyond the number one would predict when always predicting the outcome of the largest marginal. With the adjusted Count R^2 the differences between the two models become somewhat larger, though model (5) is still preferred (13.3% versus 6.4% for social entrepreneurs and 16.5% versus 11.0% for commercial entrepreneurs).

Table 10 in the Appendix shows the same binary logit models as were estimated separately for social and commercial entrepreneurs, but now for the complete sample and with *social* as an additional explanatory variable. The most interesting finding that can be drawn from Table 10 is

that *social* does not appear to be significant in any of the four models. Hence, when controlling for all the other variables included in the analysis, being a social entrepreneur no longer seems to be related to the survival of the enterprise, as was the case in the bivariate analysis.

4.3 Robustness check

One limitation of the previous analysis is that the sample is rather small. It consists of 1,565 entrepreneurs who own a business that has operated for at least three years and 740 entrepreneurs who have a failed business. One potential for enlarging the dataset would be to also include the owners of "young businesses" (i.e., businesses that are younger than three years) in the category of businesses that have survived, which comprises 692 entrepreneurs. Table 12 in the appendix shows the result of the same models as in the previous section but with the adjusted *survival* as the dependent variable, for social entrepreneurs. It can be observed from Table 12 that the conclusions regarding the sign and significance of the variables do not alter much. The only differences regarding the significance of the variables are that *education* is now also significant in model (4) and *age* is not significant anymore in model (4) and (5).

Table 13 shows the same robustness check for commercial entrepreneurs. It can be observed that *age* and age^2 are not significant anymore in model (4) and (5), *risk taking* has become significant in model (4) and *growth preferences* in model (5), and *state-led market capitalism* is not significant anymore in model (5). Nevertheless, it should be noted that, in this case, almost all differences regarding the significance of variables concern variables that are only significant at the 10% level, which implies that the differences might appear more substantial than they actually are.

Finally, Table 14 shows the same robustness check for the complete sample and with *social* included as an additional independent variable. Again, it can be observed that being a social entrepreneur does not appear to be significantly related to the survival of the business in any of the four models. Hence, the robustness checks in which survival is defined differently do not seem to alter the results to a large extent.

5. Discussion

5.1 Discussion of the results and implications for public policy

This section provides further insights into the regression results and discusses the internal as well as external factors related to the survival of (social) enterprises and some possible implications of the findings for public policy.

With respect to the internal factors, the results showed that, in accordance with previous literature on commercial entrepreneurs (Bates, 1990; Brüderl et al., 1992), education appears to be positively related to the survival of commercial as well as social enterprises. If there are no other factors of influence (that is, if we can assume causality) this would imply that in order to improve the survival of (social) enterprises, it would be advisable for governments to improve the education level of their citizens or to provide incentives for higher educated individuals to engage in (social) entrepreneurship. However, as is argued in more detail below, the regression results indicate relations between variables, which does not necessarily imply that there is also causality. In other words, education might be endogenous. Although most of the studies on this topic ignore the endogenous nature of education (Van der Sluis & Van Praag, 2004), there are a few studies that examine the effect of education on the performance of commercial entrepreneurs with the use of an instrumental variable (IV) approach. These studies have confirmed that education is indeed endogenous (Parker & Van Praag, 2006; Van der Sluis, Van Praag, & Van Witteloostuijn, 2004).

A possible reason for the endogenous nature of education is that there might be other factors, which are not examined in this paper, that are related to the education level of the entrepreneur and also have an influence on survival. For example, individuals who have a higher level of ability might on average have a higher education level as it takes less effort for them to obtain this education. If the businesses of these individuals perform better than the businesses of people with less education, this might simply be due to the entrepreneurs' higher ability instead of the knowledge they have gained through their education. A study by Van der Sluis et al. (2004) takes into account the ability level of entrepreneurs as well as other factors that might obscure the relation between education and performance[23]; this study indicates that the effect of the returns to education is biased upwards when ability is omitted, although, when taking into account the ability level of the entrepreneur the positive effect of education on performance is still significant.

[23] Since they use panel data they are able to control for individual characteristics that vary over time as well as economic fluctuations. In addition, they control for the gender of the entrepreneur, whether the entrepreneur is married, and the race of the entrepreneur.

For individuals who are engaged in paid labor, there has been a substantial amount of theory and empirical evidence that argues that the education of these individuals does not (exclusively) increase their wages due to an increase in productivity, as argued by human capital theory, but rather (or as well) due to the signal it conveys about unobservable traits of the individual, such as their intelligence, ability, or motivation (Brown & Sessions, 1999; Connelly, Certo, Ireland, & Reutzel, 2011; Spence, 1973; Weiss, 1995). A similar argument could apply to (social) entrepreneurs. Entrepreneurs with a higher education level might have a higher level of performance because potential capital suppliers, customers, and other stakeholders use the education level of the entrepreneur as a screening device (Van der Sluis & Van Praag, 2004). Hence, another factor which might obscure the relation between education and survival is the extent of capital constraints. Although this paper also takes into account the influence of a lack of financial resources at start-up, it does not examine a possible interaction between education and a lack of financial resources. A study by Parker and Van Praag (2006) does examine the interaction between education and capital constraints. Their study, which takes into account the endogenous nature of both education and capital constraints with the use of an IV approach, shows that education is still positively related to performance, although part of the positive effect of education on performance consists of the indirect effect of education reducing capital constraints.

Thus, although there is compelling evidence that education is endogenous, there is also persuasive evidence that education still has a positive effect on the performance of entrepreneurs, as studies that apply an IV approach find that the returns to education are even higher compared to OLS estimates (Parker & Van Praag, 2006; Van der Sluis et al., 2004)[24]. Hence, although the magnitude of the effect of education on survival estimated in this paper might not be accurate, based on this previous evidence, it is likely that in general there will be some influence of the education level of entrepreneurs on the survival of their business. Therefore, it would be advisable for governments to improve the education level of (potential) (social) entrepreneurs or encourage higher educated individuals to pursue an entrepreneurial career. This paper has used the entrepreneur's age when he/she finished full-time education as a measure of the education level of the entrepreneur. However, a recent trend that might have an even stronger influence on the occurrence and success of social enterprises is education aimed specifically at social entrepreneurs. Nowadays social entrepreneurship is even incorporated into the curricula of leading universities, and to stimulate

[24] It should be noted that the use of instrumental variables has also be subject to some critique as well as the choice of the particular instruments in these studies (Van der Sluis & Van Praag, 2004).

social entrepreneurship even more, a promising avenue might be to integrate it into high school education as well (Mair, 2010).

The concave relationship between age and survival that was hypothesized is supported for social entrepreneurs, but only weak support is found for commercial entrepreneurs. The latter is in contrast to previous studies that find a concave relationship between the age of a commercial entrepreneur and survival (Bates, 1990; Holtz-Eakin et al., 1994; Preisendörfer & Voss, 1990). However, there are also studies that find a positive linear relation between the age of commercial entrepreneurs and the survival of their business (Bosma et al., 2000; Kalleberg & Leicht, 1991; Van Praag, 2003). To test whether this also holds for this dataset, model (1), (4), and (5) have been estimated with *age* included but age^2 excluded. However, *age* does not appear to be significantly related to the survival of commercial enterprises in any of the models, implying that for commercial entrepreneurs there is only weak evidence of a concave relation between age and survival and no evidence of a linear relation.

Nevertheless, the results for social entrepreneurs are more consistent and have some important implications. Since there is evidence that social entrepreneurs are overrepresented in the younger and older age categories (Hoogendoorn et al., 2011), one way to increase the longevity of social enterprises is to stimulate people in the middle-age categories to engage in social entrepreneurship, since the results show that these individuals are most likely to own a business that survives. Furthermore, policies supporting social entrepreneurship could be specifically targeted at younger entrepreneurs (i.e., those that are less likely to survive), which would thereby increase their chances of survival[25]. Again, it should be emphasized that the relation between age and survival does not imply causality. Especially in this case it is very likely that there are other unobservable factors of influence. For example, entrepreneurs of a somewhat higher age might have more (work) experience, better access to capital, or less alternative options on the labor market (Cooper, 1993) and therefore these entrepreneurs might be more likely to continue their business. However, after a certain age individuals might have lower levels of energy or might be less motivated to perform well than younger individuals, which could explain the concave relationship between age and survival. Although it is beyond the scope of this paper, it would be interesting to examine in more detail which factors could explain the concave relationship between entrepreneurs' age and the survival of

[25] The businesses of entrepreneurs in the older age categories were also shown to be less likely to survive, however, the benefits of policies supporting older entrepreneurs would probably be much lower than for younger entrepreneurs, who are expected to remain in business for a much longer time.

their social enterprises, which would allow governments to construct even more effective policies than the ones mentioned above.

Entrepreneurs' preferences towards growth show no significant relation with survival in any of the regression models for social as well as commercial entrepreneurs, although the bivariate analysis showed some evidence of a significant negative relationship between growth preferences and survival. Thus, the negative relation between growth preferences and survival might be captured by some of the other factors included in the analysis. For instance, younger entrepreneurs might be more likely to prefer rapid growth and therefore the finding that their enterprises are less likely to survive might be partly due to the higher growth preferences of these entrepreneurs which are negatively related to the survival of their business. Another reason why growth preferences might not be significant is that the measure is not accurate enough since it is based on the advice that the entrepreneurs would give to a friend who has just started a business rather than the entrepreneurs' growth ambitions for their own business.

With respect to the attitudes of entrepreneurs towards risk and the willingness to change things, again some interesting differences between social and commercial entrepreneurs can be observed. In line with previous research (Stam et al., 2010), there is some evidence that commercial entrepreneurs who claim that they are in general willing to take risks have a larger chance of having their business survive, whereas no significant association can be found for social entrepreneurs. It has been acknowledged that social entrepreneurs face different risks than commercial entrepreneurs (Weerawardena & Sullivan Mort, 2006); thus, the findings might imply that the risks that social entrepreneurs face are less likely to be related to survival than the risks that commercial entrepreneurs face. As expected, the willingness to change existing practices is not only considered to be a defining characteristic of social entrepreneurs (Bornstein, 2007; Dees, 1998b; Sharir & Lerner, 2006), but also significantly contributes to the chances of survival of social enterprises, whereas no significant relationship is found for commercial entrepreneurs.

One important external barrier that is significantly negatively related to the chances of survival of social enterprises is a perceived lack of financial support when starting a business, confirming expectations and previous research on commercial enterprises (Bates, 1990; Bruno et al., 1992; Cooper et al., 1994; Stam et al., 2010). However, for commercial entrepreneurs there is only weak evidence of a negative relation between a lack of financial resources and survival, which indicates that social entrepreneurs indeed face special challenges with regard to financial support (Thompson et al., 2000; Yitshaki et al., 2008). This finding has important implications for public policy as it has

been recognized that raising the required amount of financial resources is even harder for social entrepreneurs than it is for commercial entrepreneurs (Austin et al., 2006; Roper & Cheney, 2005; Sharir & Lerner, 2006; Zahra et al., 2009). Moreover, a lack of financial resources might not only be detrimental for the success of individual social entrepreneurs, but even more so for the country as a whole and for achieving the broader goals that many social entrepreneurs have in mind. As Bornstein (2007) puts it: "…the greatest risk to social entrepreneurship today is the shortage of growth financing necessary to build a critical mass of organizations that can achieve major and visible—i.e., national level—success" (p. xii). Thus, if governments want to stimulate social entrepreneurship and unlock the potential of these willing individuals, they are highly recommended to increase the array of available financial services available at start-up and probably also during the development and growth stages of social enterprises. This can be achieved, for instance, through funding from government, investors, or foundations. Examples of successful funding opportunities for social entrepreneurs are the emergence of social stock exchanges (e.g., the BVSA in Brazil), the emergence of social impact bonds (e.g., in the United Kingdom), and support organizations like Ashoka or the Skoll Foundation[26]. Probably the best, though perhaps also the most difficult, solution would be to create support programs that enable social entrepreneurs to generate their own revenues that would at least cover their operating costs. However, this is rather difficult as social entrepreneurs often operate their business in areas where markets function poorly and consumers are unable to pay a sufficient price (Austin et al., 2006; Mair & Martí, 2006). Furthermore, too much focus on commercial operations could undermine the enterprise's social mission (Dees, 1998a).

For social entrepreneurs there is also some evidence that a perceived lack of information on how to start a business is negatively related to the survival of their enterprise; this indicates another opportunity for governments to support social entrepreneurship. In contrast, for commercial entrepreneurs there is no significant evidence that a perceived lack of information is related to the survival of their business, which is similar to the findings of Stam et al. (2010).

The results also show that there appears to be some variation in the survival of social as well as commercial businesses across the different varieties of capitalism. For both social and commercial entrepreneurs who operate in a country classified as Asian capitalism the probability that their enterprise survives is significantly lower than in countries classified as market-based capitalism.

[26] For more information please refer to http://www.bvsa.org.br/bvsa?idioma=en-us (BVSA), http://www.socialfinance.org.uk/work/sibs (Social Impact Bonds), https://www.ashoka.org/ (Ashoka), and http://www.skollfoundation.org/ (Skoll Foundation).

Asian capitalism differs from the other types of capitalism in that it depends heavily on the strategies of the large firms. In addition, the centralized financial system lacks sophistication and there is a low level of social protection (Amable, 2003). The complementarities between the particular institutions of Asian capitalism seem to have a negative influence on the survival of (social) enterprises. Similarly, there is also evidence that social as well as commercial entrepreneurs operating under state-led market capitalism have significantly lower chances of survival (as compared to entrepreneurs operating under market-based capitalism). Although these former socialist countries appear to be closest to the market-based model, the difference is that they are more state-led and have lower levels of privatization (Lane, 2005). There is also some evidence that state-led Continental capitalism is negatively related to the survival of social enterprises, whereas no such evidence can be found for commercial enterprises. Thus, although (almost) no research has examined the relation between different varieties of capitalism and the survival of the enterprises of social and commercial entrepreneurs, the varieties of capitalism approach does provide an interesting avenue for future research since there appear to be significant differences.

Various measures of fit were computed to examine whether the varieties of capitalism approach adds some explanatory power as compared to the model with the country dummies. Overall, most of the measures of fit prefer the model with the country dummies instead of the variety of capitalism dummies. Nonetheless, this does not mean that the varieties of capitalism approach is not useful; often the difference between the two models is not very large and the LR-test showed that the variety of capitalism dummies jointly do add significant explanatory power to the model. From a purely econometric perspective and for predictive purposes the model with the country-specific effects would be preferred, but for interpretive purposes the model with the varieties of capitalism is also interesting as it sheds light on the similarities between different countries and economic systems. However, one caveat that should be kept in mind is that the marginal effects of the country dummies showed that within almost every type of capitalism there were one or several countries that showed a significant effect of a different sign than most of the other countries within that type of capitalism. This indicates that there are country-specific effects related to the survival of (social) enterprises that are not captured by the classification of the seven types of capitalism included in the analysis. Thus, although the varieties of capitalism approach might be useful for other purposes, it might be less useful for the explanation of the survival of businesses than expected.

Finally, a remarkable conclusion drawn from the regression results was that the variable *social* was not significantly related to the survival of enterprises in any of the four regression models. This is in

contrast to the bivariate analysis, where both the correlation coefficient and the Pearson χ^2 statistic provided significant evidence of a negative relation between being a social entrepreneur and survival. Hence, when controlling for all the other variables included in the analysis, being a social entrepreneur no longer seems to be related to the survival of the enterprise. This finding indicates that the differences in survival between social and commercial enterprises are captured by the other factors included in the analysis, which is in contrast to a large part of the academic literature and common perception, where it is often acknowledged that having a social (as opposed to a commercial) enterprise is inevitably linked to a decrease in performance. For example, many scholars argue that enterprises that focus on social goals cannot at the same time earn a profit and therefore these scholars limit their definition of social enterprises to NFP businesses (e.g., Dees, 1998b; Thompson, 2002; Weerawardena & Sullivan Mort, 2006). Even social entrepreneurs themselves tend to have a negative view towards their own performance; data from the Global Entrepreneurship Monitor (GEM) shows that as social entrepreneurs gain more experience they are less likely to view social entrepreneurship as a good career choice and are more likely to fear failure (Harding, 2006).

This paper shows that although it is true that social enterprises on average have lower chances of survival than commercial enterprises, this is not due to the mere fact of being a social enterprise but rather it can be explained by the different characteristics that social entrepreneurs have in comparison to commercial entrepreneurs and the differences in the external influences that they face. In the above discussion several of these factors that are related to the survival of social enterprises were highlighted, together with some implications for public policy. Since this study focuses on the survival of businesses, it can only be concluded that the survival of social enterprises is not significantly different from commercial enterprises when taking these factors into account. Hence, if the factors that are related to the inferior survival of social enterprises can be identified, in the future the differences in the survival between social and commercial enterprises could disappear. An interesting avenue for future research would be to examine whether the same conclusion also applies to other performance measures, such as profits.

5.2 Limitations and recommendations for future research

Although the findings of this paper are interesting and indicate some important implications for public policy, they need to be interpreted with some caution since there are also some limitations that need to be taken into account and since there is barely any previous empirical research

available to which the findings can be compared. Most of the limitations are related to the secondary dataset that is used, which was not collected specifically for this paper.

First of all, since only businesses older than three years or businesses that have failed are considered, the sample is rather small and there is the possibility of selection bias. Thus, caution must be applied when extrapolating the findings of this study to a broader population and more research, preferably on a larger sample, is warranted to confirm the findings.

Additionally, the employed dataset was cross-sectional, which implies that only relationships at a certain point in time can be examined, whereas the dependent variable *survival* is actually something that occurs over time. For example, the variable *age* is measured at the time when the survey was conducted, but if the entrepreneur's business has failed this might also have occurred when he/she was much younger. Moreover, if an entrepreneur is classified as a successful entrepreneur in this dataset (i.e., the entrepreneur has a business older than three years), this does not rule out the possibility that the same entrepreneur had a failed business several years ago. Hence, the conclusions with respect to the explanatory variables that change over time need to be interpreted somewhat more carefully. For future research it would be recommended to employ a longitudinal dataset, with which it would be possible to examine changes over time and which could possibly lead to stronger conclusions as more information can be gathered.

Moreover, this study examines which factors are related to the survival of social and commercial enterprises, that is, it tries to identify internal as well as external factors that could prevent the failure of an enterprise. Although failure often has a negative connotation and is something that most people and entrepreneurs try to avoid, it is not always a bad thing as people can learn from failure as well. There are numerous examples of successful entrepreneurs who have had previous businesses that have failed. This does not necessarily imply that it is not useful to look at survival. At the aggregate level it would still be favorable for most businesses to survive. This is especially true for social enterprises, which can be very important for the target groups they are serving who normally do not have many alternatives. What it does imply is that it would be interesting to examine the previous business experience of entrepreneurs.

Another limitation of the dependent variable is that *survival* is not a perfect measure of the success of social entrepreneurs. Although for new ventures survival is often considered to be a critical measure of success, it is unable to distinguish between relative levels of performance (Van de Ven et al., 1984), of which profit would probably be a better measure but profit information was

unfortunately not available in the dataset. Moreover, the true success of social entrepreneurs lies not in their creation of financial wealth but rather in their creation of social wealth. The latter is, however, very difficult to quantify (Emerson, 2003; Weerawardena & Sullivan Mort, 2006; Zahra et al., 2009) and thus survival might be a good approximation and can be seen as a means to an end (Dees, 1998b). Nonetheless, measuring the true social value creation of social entrepreneurs would be a challenging avenue for future research, although it would presumably take a while before this measure can be operationalized since it is questionable whether the field is currently sufficiently developed to achieve this.

The definition of social entrepreneurs that is used for this paper might also be subject to some criticism as it is based on only one survey question that measures the social motives of entrepreneurs at the start-up of their business. Although it does correspond with the view of many scholars who believe that the social mission and motives should be explicit and central (Austin et al., 2006; Dacin et al., 2010; Dees, 1998b; Weerawardena & Sullivan Mort, 2006; Yitshaki et al., 2008; Zahra et al., 2009), it might be advisable for future research to construct different measures of social entrepreneurship. For instance, researchers could also focus on the social mission instead of only on the social motives and could consider the degree of social involvement instead of using a dichotomous approach.

As with almost any empirical model, it is virtually impossible to capture all factors that could be relevant in the model. One important factor that is unfortunately not available in the dataset is social capital, which can be defined as "the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit" (Nahapiet & Gosha, 1998, p. 243). In commercial entrepreneurship research it has been shown that there is a significant link between social capital and entrepreneurial survival (Bosma et al., 2000; Bosma, Van Praag, Thurik, & De Wit, 2004; Brüderl & Preisendörfer, 1998; Pennings, Lee, & Van Witteloostuijn, 1998). For social entrepreneurs social capital may be even more important, as social entrepreneurship is more entrenched in the social context (Yitshaki et al., 2008). There is indeed some empirical evidence that social capital is important for the survival of social enterprises (Sharir & Lerner, 2006). Thus, another interesting avenue for further research would be to also examine the influence of social capital on the survival of social enterprises.

Finally, it must be kept in mind that the significant results presented in this paper represent relationships between the particular explanatory variables and survival, but do not necessarily imply causality. The possibility that education might be endogenous was already described in detail

in the discussion but there is also a possibility that other variables included in the analysis are endogenous. For instance, there might be third factors which influence both an explanatory variable and the dependent variable in a similar way and therefore an implied causal relation might be spurious. For example, entrepreneurs who have a higher level of motivation and put in more effort might find it easier to obtain the required amount of financial resources at start-up and due to their higher motivation they might also be more likely to survive. Furthermore, there might be interactions between the variables included in the analysis (e.g., as described in the discussion, there might be an interaction between education and a lack of financial resources) that have not been examined. Therefore, no conclusions can be drawn concerning the causality between the factors included in this paper and the survival of businesses but only about relationships between these variables. This provides yet another reason why the use of panel data would be recommended for future research.

6. Conclusion

In areas where neither conventional enterprises nor the government have been able to meet the needs of all members of society, social entrepreneurs have an important role to play. Although the concept of social entrepreneurship is not an entirely new phenomenon, recently it appears to have become more recognized and eminent. Social entrepreneurship receives increasing attention in the media, numerous websites are dedicated to the topic, and there are multiple associations providing assistance to social entrepreneurs. Despite the fact that in academia there are also more and more books and articles dedicated to social entrepreneurship, a consistent academic definition of the concept and an empirical backing are still lacking. Especially the latter appears to be an obstacle to the acceptance of social entrepreneurship as a legitimate and separate area of research. This study contributes to the existing literature by carrying out an in-depth novel empirical analysis.

The aim of this paper is to examine which factors are related to the survival of social enterprises, and if these factors are different for commercial enterprises. The results show that some factors have a similar relation to the survival of social and commercial enterprises. For example, for both types of entrepreneurs the education level of the entrepreneur is significantly positively related to survival, whereas growth preferences show no significant relation with survival. The type of capitalism existing in the country where the entrepreneur operates also appears to be of influence, as there is significant evidence that businesses operating in countries under Asian capitalism or state-led market capitalism are less likely to survive than businesses operating under market-based capitalism. However, there are also factors that are related differently to the survival of social and commercial enterprises. There is strong evidence that the enterprises of social entrepreneurs in the middle-age category are more likely to survive, but there is only weak evidence that this also applies to commercial entrepreneurs. The willingness of entrepreneurs to take risks is positively related to the survival of commercial enterprises, but appears to have no significant relation to the survival of social enterprises. In contrast, the willingness of entrepreneurs to change things is positively related to the survival of social enterprises, whereas no significant relation can be found for commercial enterprises. There is strong evidence that a lack of financial support is negatively related to the survival of social enterprises, but only weak evidence that this also holds for commercial enterprises. Moreover, there is some evidence that a lack of information is negatively related to the survival of social enterprises, whereas it does not seem to influence the survival of commercial enterprises.

The fact that there appear to be differences between the factors related to the survival of social enterprises, as compared to commercial enterprises, highlights the importance of treating these two types of entrepreneurs as separate groups and taking into account their different characteristics and differences in the external influences they face. The findings also imply that, although some insights can be obtained from previous research on commercial entrepreneurs, it would be very fruitful to conduct more research specifically targeted at social entrepreneurs as there appear to be some important differences that cannot be ignored.

Moreover, since none of the models estimated for the complete sample showed that simply being a social entrepreneur is negatively related to survival, which is in contrast to the bivariate analysis, it implies that the inferior performance that is often attributed to social enterprises (Harding, 2006; Hoogendoorn et al., 2011; Weerawardena & Sullivan Mort, 2006) can be explained by at least some of the factors included in this paper, such as the age of the entrepreneur, a lack of financial support, and the country where the entrepreneur is operating. If the same also applies to other performance measures (e.g., profits) and this fact becomes acknowledged throughout society, this could improve the potential pool of social entrepreneurs as there might be a lot of people who shy away from being a social entrepreneur because they are afraid they will not be able to earn a sufficient income.

To conclude, besides the contribution that this paper makes to the meager amount of empirical studies on social entrepreneurship, it also indicates some interesting avenues for future research and provides an appealing new perspective on the performance of social enterprises. If future research is able to confirm that social entrepreneurship in itself does not lead to worse performance and if more research is able to find the factors that do contribute to the performance of social enterprises, this could further increase the interest in the field and unlock the potential of individuals pursuing entrepreneurial efforts to solve the remaining problems facing the world today.

7. References

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8. Appendix

Table 10: Marginal effects of binary logit models with *survival* as the dependent variable for the total sample.

	Model (1)		Model (2)		Model (3)		Model (4)		Model (5)	
Social	-0.020	(0.023)	-0.024	(0.025)	-0.025	(0.021)	-0.012	(0.023)	-0.006	(0.022)
Internal factors:										
Education	0.140***	(0.037)					0.124***	(0.036)	0.115***	(0.033)
Age	0.215***	(0.055)					0.202***	(0.055)	0.225***	(0.054)
Age^2	-0.021***	(0.006)					-0.020***	(0.006)	-0.022***	(0.005)
Risk taking	0.026**	(0.013)					0.020*	(0.012)	0.017	(0.014)
Growth preferences	-0.015	(0.034)					-0.019	(0.036)	-0.054*	(0.028)
Change	0.021	(0.018)					0.028*	(0.017)	0.024	(0.016)
External factors:										
Lack of financial support			-0.043***	(0.015)			-0.039**	(0.016)	-0.050***	(0.015)
Lack of information			-0.028**	(0.012)			-0.018	(0.012)	-0.025**	(0.012)
Varieties of capitalism:										
Social-democratic					0.016	(0.051)			0.060	(0.057)
Continental European					0.012	(0.042)			-0.011	(0.047)
Mediterranean					-0.085**	(0.043)			-0.067	(0.047)
Asian					-0.247***	(0.047)			-0.217***	(0.053)
State-led Continental					-0.048	(0.043)			-0.019	(0.047)
State-led market					-0.150***	(0.052)			-0.142**	(0.055)
Control variables:										
Male	0.034*	(0.020)	0.033	(0.022)	0.061***	(0.020)	0.027	(0.021)	0.037*	(0.022)
Competitiveness	0.021	(0.014)	0.018	(0.013)	-0.002	(0.012)	0.019	(0.014)	0.004	(0.013)
Self-employed parents	0.082***	(0.019)	0.077***	(0.021)	0.074***	(0.021)	0.088***	(0.021)	0.089***	(0.022)
Country dummies	Yes		Yes		No		Yes		No	
Observations	1,993		2,090		2,256		1,881		1,890	
log likelihood	-1,126		-1,191		-1,366		-1,054		-1,104	
Pseudo R^2	0.101		0.095		0.036		0.110		0.070	

*** denotes significance at 1%; ** denotes significance at 5%; * denotes significance at 10%.

Source: Flash Eurobarometer Survey on Entrepreneurship 2009 (No. 283).

Notes: The dependent variable is *survival*, which takes the value 1 if the respondent started or took over a business more than three years ago that is still active; and 0 if the respondent once started a business that has failed.
Robust standard errors are in parentheses. For model (1), (2), and (4) the standard errors are clustered by country.
For the variety of capitalism dummies, the reference category is *market-based capitalism*.
The variables *education* and *age* are divided by 10 and age^2 by 10^2.

Table 11: Marginal effects of model (4) for each of the country dummies.

		Social		Commercial		Both	
Variety of capitalism:	*Country:*						
Market-based	United Kingdom	0.004	(0.021)	0.177***	(0.011)	0.103***	(0.011)
Social-democratic	Denmark	-0.273***	(0.025)	0.117***	(0.014)	-0.074***	(0.016)
	Finland	0.232***	(0.018)	0.035	(0.024)	0.095***	(0.017)
	Iceland	0.279***	(0.008)	0.157***	(0.013)	0.240***	(0.006)
	Sweden	-		0.022	(0.021)	0.097***	(0.013)
Continental European	Austria	-0.012	(0.031)	0.151***	(0.018)	0.078***	(0.018)
	Belgium	-0.252***	(0.030)	-0.278***	(0.040)	-0.259***	(0.022)
	France	-0.052	(0.035)	0.157***	(0.015)	0.053***	(0.020)
	Germany	0.118***	(0.022)	0.059**	(0.024)	0.074***	(0.018)
	Ireland	-0.108***	(0.027)	0.165***	(0.015)	-0.005	(0.018)
	Luxembourg	0.092***	(0.033)	0.126***	(0.020)	0.110***	(0.018)
	Netherlands	0.006	(0.027)	0.140***	(0.018)	0.090***	(0.016)
	Norway	-0.076***	(0.020)	-0.056***	(0.021)	-0.071***	(0.014)
	Switzerland	-0.058**	(0.029)	0.169***	(0.011)	0.087***	(0.014)
Mediterranean	Cyprus	-0.118***	(0.028)	-0.069*	(0.041)	-0.097***	(0.024)
	Greece	-0.056*	(0.030)	-0.151***	(0.026)	-0.054**	(0.023)
	Italy	0.089***	(0.029)	0.238***	(0.009)	0.156***	(0.016)
	Malta	-		-		-	
	Portugal	-0.102***	(0.038)	-0.013	(0.038)	-0.053**	(0.027)
	Spain	-0.157***	(0.033)	0.022	(0.033)	-0.079***	(0.025)
	Turkey	0.029	(0.031)	0.131***	(0.040)	0.073***	(0.023)
Asian	China	-0.262***	(0.046)	-0.377***	(0.047)	-0.283***	(0.039)
	Japan	0.084***	(0.027)	-0.019	(0.048)	0.090***	(0.021)
	South Korea	-0.263***	(0.026)	-0.207***	(0.040)	-0.225***	(0.023)
State-led Continental	Czech Republic	0.106***	(0.027)	0.166***	(0.017)	0.145***	(0.014)
	Estonia	-0.057***	(0.020)	0.054**	(0.022)	-0.010	(0.014)
	Hungary	-0.049*	(0.028)	0.074***	(0.027)	0.018	(0.019)
	Poland	-0.133***	(0.021)	0.058***	(0.018)	-0.046***	(0.016)
	Slovakia	-0.074***	(0.016)	-0.046*	(0.027)	-0.068***	(0.016)
	Slovenia	-0.144***	(0.024)	0.197***	(0.006)	0.055***	(0.010)
State-led market	Bulgaria	-0.118***	(0.017)	-0.049	(0.033)	-0.089***	(0.017)
	Croatia	-0.145***	(0.026)	-		-0.052**	(0.020)
	Romania	-0.266***	(0.026)	-0.318***	(0.020)	-0.274***	(0.018)
	Latvia	-0.014	(0.018)	0.036	(0.024)	0.018	(0.016)
	Lithuania	-0.052**	(0.022)	0.010	(0.030)	-0.022	(0.018)

*** denotes significance at 1%; ** denotes significance at 5%; * denotes significance at 10%.

Notes: The reference category is the *United States*. For a few countries, sometimes no values are reported as the dependent variable did not vary across the observations for this country.
The dependent variable is *survival*, which takes the value 1 if the respondent started or took over a business more than three years ago that is still active; and 0 if the respondent once started a business that has failed.
Robust standard errors are in parentheses; the standard errors are clustered by country.

Table 12: Robustness check binary logit model for social entrepreneurs.

	Model (1)		Model (2)		Model (3)		Model (4)		Model (5)	
Internal factors:										
Education	0.111**	(0.044)					0.109**	(0.047)	0.103***	(0.035)
Age	0.094*	(0.053)					0.081	(0.055)	0.079	(0.052)
Age^2	-0.012**	(0.005)					-0.011*	(0.006)	-0.010*	(0.005)
Risk taking	0.019	(0.015)					0.012	(0.014)	0.008	(0.014)
Growth preferences	-0.031	(0.041)					-0.029	(0.043)	-0.044	(0.030)
Change	0.033**	(0.013)					0.042***	(0.012)	0.035**	(0.016)
External factors:										
Lack of financial support			-0.058***	(0.013)			-0.061***	(0.016)	-0.065***	(0.016)
Lack of information			-0.024*	(0.012)			-0.018	(0.013)	-0.022*	(0.013)
Varieties of capitalism:										
Social-democratic					0.073	(0.055)			0.108*	(0.058)
Continental European					-0.001	(0.050)			-0.004	(0.055)
Mediterranean					-0.062	(0.049)			-0.047	(0.055)
Asian					-0.181***	(0.054)			-0.153**	(0.061)
State-led Continental					-0.105*	(0.055)			-0.034	(0.057)
State-led market					-0.118*	(0.062)			-0.113*	(0.064)
Control variables:										
Male	0.006	(0.021)	0.001	(0.021)	0.026	(0.021)	0.000	(0.022)	0.012	(0.022)
Competitiveness	0.014	(0.018)	0.016	(0.018)	0.002	(0.012)	0.012	(0.017)	0.001	(0.014)
Self-employed parents	0.073***	(0.025)	0.067***	(0.023)	0.064***	(0.022)	0.074***	(0.027)	0.065***	(0.023)
Country dummies	Yes		Yes		No		Yes		No	
Observations	1,586		1,673		1,775		1,503		1,528	
Log likelihood	-829		-882		-993		-774		-813	
Pseudo R^2	0.087		0.081		0.026		0.100		0.064	

*** denotes significance at 1%; ** denotes significance at 5%; * denotes significance at 10%.

Source: Flash Eurobarometer Survey on Entrepreneurship 2009 (No. 283).

Notes: The dependent variable is *survival*, which takes the value 1 if the respondent once started a business that is still active today; and 0 if the respondent once started a business that has failed.
Robust standard errors are in parentheses. For model (1), (2), and (4) the standard errors are clustered by country.
For the variety of capitalism dummies, the reference category is *market-based capitalism*.
The variables *education* and *age* are divided by 10 and age^2 by 10^2.

Table 13: Robustness check binary logit model for commercial entrepreneurs.

	Model (1)		Model (2)		Model (3)		Model (4)		Model (5)	
Internal factors:										
Education	0.170***	(0.044)					0.146***	(0.046)	0.126***	(0.040)
Age	-0.027	(0.067)					-0.002	(0.071)	0.009	(0.067)
Age^2	0.002	(0.006)					-0.001	(0.006)	-0.003	(0.006)
Risk taking	0.040**	(0.017)					0.037**	(0.016)	0.034*	(0.017)
Growth preferences	-0.036	(0.042)					-0.047	(0.043)	-0.072*	(0.037)
Change	-0.009	(0.020)					-0.005	(0.021)	-0.002	(0.020)
External factors:										
Lack of financial support			-0.025	(0.018)			-0.018	(0.019)	-0.032*	(0.018)
Lack of information			-0.019	(0.015)			-0.006	(0.016)	-0.015	(0.015)
Varieties of capitalism:										
Social-democratic					0.018	(0.051)			0.037	(0.059)
Continental European					0.060	(0.043)			0.029	(0.051)
Mediterranean					-0.052	(0.051)			-0.054	(0.059)
Asian					-0.326***	(0.075)			-0.288***	(0.086)
State-led Continental					0.031	(0.045)			0.031	(0.051)
State-led market					-0.116*	(0.068)			-0.116	(0.074)
Control variables:										
Male	0.048*	(0.029)	0.053*	(0.029)	0.071***	(0.026)	0.038	(0.028)	0.045	(0.028)
Competitiveness	0.021	(0.015)	0.029**	(0.013)	0.023	(0.015)	0.024*	(0.015)	0.020	(0.017)
Self-employed parents	0.056*	(0.030)	0.054*	(0.028)	0.047*	(0.025)	0.061**	(0.030)	0.065**	(0.027)
Country dummies	Yes		Yes		No		Yes		No	
Observations	1012		1067		1167		951		958	
Log likelihood	-473		-505		-586		-444		-467	
Pseudo R^2	0.130		0.112		0.058		0.133		0.091	

*** denotes significance at 1%; ** denotes significance at 5%; * denotes significance at 10%.

Source: Flash Eurobarometer Survey on Entrepreneurship 2009 (No. 283).

Notes: The dependent variable is *survival*, which takes the value 1 if the respondent once started a business that is still active today; and 0 if the respondent once started a business that has failed.
Robust standard errors are in parentheses. For model (1), (2), and (4) the standard errors are clustered by country.
For the variety of capitalism dummies, the reference category is *market-based capitalism*.
The variables *education* and *age* are divided by 10 and age^2 by 10^2.

Table 14: Robustness check binary logit model for the complete sample.

	Model (1)		Model (2)		Model (3)		Model (4)		Model (5)	
Social	-0.003	(0.018)	-0.003	(0.020)	-0.003	(0.017)	0.005	(0.018)	0.012	(0.018)
Internal factors:										
Education	0.135***	(0.029)					0.124***	(0.028)	0.115***	(0.027)
Age	0.050	(0.041)					0.048	(0.040)	0.059	(0.041)
Age^2	-0.007*	(0.004)					-0.007*	(0.004)	-0.008*	(0.004)
Risk taking	0.027***	(0.010)					0.022**	(0.009)	0.018*	(0.011)
Growth preferences	-0.033	(0.025)					-0.038	(0.026)	-0.058**	(0.023)
Change	0.017	(0.013)					0.023**	(0.011)	0.020	(0.012)
External factors:										
Lack of financial support			-0.045***	(0.011)			-0.044***	(0.012)	-0.050***	(0.012)
Lack of information			-0.023**	(0.009)			-0.015	(0.009)	-0.021**	(0.010)
Varieties of capitalism:										
Social-democratic					0.040	(0.039)			0.071*	(0.042)
Continental European					0.027	(0.034)			0.011	(0.038)
Mediterranean					-0.060*	(0.036)			-0.048	(0.040)
Asian					-0.206***	(0.043)			-0.179***	(0.048)
State-led Continental					-0.040	(0.037)			-0.005	(0.039)
State-led market					-0.120***	(0.046)			-0.115**	(0.048)
Control variables:										
Male	0.019	(0.016)	0.020	(0.017)	0.042**	(0.016)	0.013	(0.017)	0.024	(0.017)
Competitiveness	0.018	(0.013)	0.022	(0.014)	0.009	(0.010)	0.018	(0.013)	0.008	(0.011)
Self-employed parents	0.063***	(0.016)	0.060***	(0.016)	0.055***	(0.017)	0.067***	(0.017)	0.064***	(0.018)
Country dummies	Yes		Yes		No		Yes		No	
Observations	2,602		2,746		2,942		2,473		2,486	
Log likelihood	-1,328		-1,412		-1,591		-1,243		-1,288	
Pseudo R^2	0.087		0.078		0.032		0.099		0.068	

*** denotes significance at 1%; ** denotes significance at 5%; * denotes significance at 10%.

Source: Flash Eurobarometer Survey on Entrepreneurship 2009 (No. 283).

Notes: The dependent variable is *survival*, which takes the value 1 if the respondent once started a business that is still active today; and 0 if the respondent once started a business that has failed.
Robust standard errors are in parentheses. For model (1), (2), and (4) the standard errors are clustered by country.
For the variety of capitalism dummies, the reference category is *market-based capitalism*.
The variables *education* and *age* are divided by 10 and age^2 by 10^2.