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The role of perceptual variables in social entrepreneurship



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Abstract

Entrepreneurship and social entrepreneurship are relatively new topics that are becoming an increasingly important source of employment for women across many countries (Langowitz & Minniti, 2007). However, literature on social entrepreneurship is not as developed as the one for commercial entrepreneurship. Interestingly, there is almost no research linking perceptual variables and their influence on a person to become a social entrepreneur. Moreover, there is a gap in female social entrepreneurship literature. This paper strives to fill in the aforementioned gaps in literature as it investigates which perceptual variables are of influence on the likelihood of a woman to become a social entrepreneur, working with a sample of 49 countries used from the Global Entrepreneurship Monitor (GEM) database. Following existing literature on the topics of entrepreneurship, female entrepreneurship and social entrepreneurship, the paper links such a decision to perceptual variables such as fear of failure, knowing other entrepreneurs, confidence about one's own skills and knowledge, and alertness of opportunities, and argues that they are of importance. In addition, this investigation controls for the effects of social and demographic variables, such as age, household income and education. The results suggest that three out of the four perceptual variables introduced in the paper are significantly correlated with the likelihood of a woman to become a social entrepreneur, with the exception of fear of failure, where further research is needed.

Introduction

Entrepreneurship has become a booming and interesting topic for investigation in the last decades. A lot of research has been done on women, the low chance of them being successful in the labor market and the low chance of them becoming a prosperous entrepreneur (Verheul, et al., 2006). However, a small part of the entrepreneurship research has been concentrated on women and the likelihood of them becoming a social entrepreneur. A social enterprise is a business trading for a social purpose, or in other words every profit is reprocessed for the benefits of the activity rather than the shareholders (Harding & Cowling, 2006).

The process of starting up and running a business, together with environmental influences on entrepreneurial activity, appears to be relatively comparable for female and male entrepreneurs (Ahl, 2002). Nevertheless, the total number of female entrepreneurs is significantly lower than the number of male entrepreneurs, although the number of female entrepreneurs has grown excessively in the last decade (Koellinger, Minniti, & Schade, 2005a). It is expected that there should not be much of a difference, if females are facing the same barriers as males, such as work status, household income and education for becoming an entrepreneur (Minniti & Nardone, 2007). Yet, some research has shown that women differ in motivations, opportunity recognition and resources

connected to entrepreneurship compared to men (Carter & Brush, 2004). Langowitz and Minniti (2007) reveal that in their sample of 17 countries nearly twice as many men as women were involved in starting a business, 1.7 men for every woman (Langowitz & Minniti, 2007). Later on, Koellinger, Minniti and Schade (2011) find that, on average, in their sample of 17 countries there are 2.15 men for every woman who qualifies as established entrepreneur (Koellinger, Minniti, & Schade, 2011). Baughn, et al. (2006) state that female entrepreneurs have a significant positive effect on the innovation, wealth, and creativity in an economy, but the advantages of being a woman in the field of entrepreneurship are not being used in an efficient way, and talent and potential are not entirely recognized (Baughn, Chua, & Neupert, 2006).

It is interesting to further research the topic of which factors are of influence on the likelihood of a woman to become an entrepreneur, and more specifically – a social entrepreneur. The amount of literature written on social entrepreneurship is little, because it is a relatively new topic. Moreover, this paper will fill in a gap in female social entrepreneurship literature. What is more, there are studies which prove that women are proportionately more likely to be social than commercial entrepreneurs, which also underlines the interest of this paper (e.g. Levie & Hart, 2011).

This paper examines what influence the prevalence of personal perceptions and judgments about the environment (Arenius & Minniti, 2005) (which will be called *perceptual variables* from now on throughout the paper), such as fear of failure, knowing other entrepreneurs, alertness of unexplored opportunities, and confidence of one's skills and abilities have on the likelihood of a woman becoming a social entrepreneur. Many studies report that perceptions are subjective and are thus likely to be biased (e.g. Minniti M., 2010). Arenius and Minniti (2005) state that in addition to demographic and economic factors, perceptual variables are also of importance and are highly correlated with an individual's decision to start a business (Arenius & Minniti, 2005). The differences in subjective perceptions and the extent to which such perceptions are biased may contribute to the understanding why some women start businesses while others do not (Koellinger, Minniti, & Schade, 2007).

Entrepreneurial activity has increased in the last years and has drawn researchers' attention (Austin, et al., 2006; Hoogendoorn, et al., 2010). Scholars tend to give different definitions for the concept of social entrepreneurship (Dees, 1998). After a long discussion, Hébert and Link (1989) define someone who is an entrepreneur as "someone who specializes in taking responsibility for and making judgmental decisions that affect the location, form, and the use of goods, resources, or institutions" (Hébert & Link, 1989). Bygrave and Hofer (1991) define an entrepreneur as 'someone who perceives an opportunity and creates an organization to pursue it' (Bygrave & Hofer, 1991), which is also what

Koellinger, Minniti and Schade (2011) say in their research (Koellinger, Minniti, & Schade, 2011). In this paper, a social entrepreneur is defined as someone who is an entrepreneur, has a social mission and creates social value to its customers (Lepoutre, et al., 2013).

The main difference between commercial entrepreneurship and social entrepreneurship is that the top priority of commercial entrepreneurship is not to create social value, but to create economic value (Mair & Martí, 2006), personal and shareholder wealth (Zadek & Thake, 1997; Hibbert, et al., 2002; Mair & Noboa, 2003). Nevertheless, commercial and social entrepreneurship considerably overlap in the nature of their activity (Levie & Hart, 2011). Both social and commercial entrepreneurship involve starting a business and bearing the risk of starting a business, therefore there is no reason to assume that social entrepreneurship is different. Furthermore, social entrepreneurship is still rather young and underdeveloped and there are only a few insights from social entrepreneurship literature. Therefore, the hypotheses of this paper are based on commercial entrepreneurship literature and the paper tests whether the same conclusions hold for social entrepreneurship.

Research on entrepreneurship has been extensively studied, including the influence of perceptual variables and gender differences on the likelihood that an individual becomes an entrepreneur. According to Benavides-Espinosa and Mohedano-Suanes (2012) women have been joining the labor market in increasing numbers, including the field of entrepreneurship. The literature on entrepreneurship suggests that a feature of women entrepreneurs is their higher sensitivity 'towards the needs of their environment (Jalbert, 2000), which could determine their relevant role in the framework of social entrepreneurship' (Benavides-Espinosa & Mohedano-Suanes, 2012). However, little research has been done on what pushes women towards the field of social entrepreneurship and what role perceptual variables play in their decision to become a social entrepreneur. This paper will contribute to the academic literature on social entrepreneurship and gender studies by examining the role of perceptual variables in social entrepreneurship and their influence on women.

Therefore, the research question is: *Which perceptual variables are of influence on the likelihood of a woman to become a social entrepreneur?*

A binomial logistic regression will be used later in this paper using data from the Global Entrepreneurship Monitor, which assesses the entrepreneurial activity, aspirations and attitudes of individuals across a wide range of countries annually (Global Entrepreneurship Monitor). Six models will be included in the research in order to determine the influence of different variables on the likelihood of a woman to become a social entrepreneur. In addition to the perceptual variables, the models will control for socio-economic and demographic variables, such as age, household income,

education and country. No crucial difference is expected compared to commercial entrepreneurs and the factors that pushes women to pursue the entrepreneurship career path.

The paper will, firstly, consist of reviewing and summarizing what previous research has found on perceptual variables, gender, and female social entrepreneurship, from which hypotheses are derived. Secondly, the paper will reveal the data and the methodology used to test the hypotheses, focusing on the model used to test the hypotheses. Thirdly, the results of the logistic regression model will be presented and discussed. Last but not least, the paper will reveal the conclusions based on the results that are found and the limitations of the paper will be addressed.

Literature review and hypotheses

In the this section the paper is going to review the concepts of entrepreneurship, social entrepreneurship and female social entrepreneurship in detail and derive the four hypothesis that follow from the research question.

Social entrepreneurship is a subcategory of entrepreneurship that is creating a booming interest in the scholar world, although it is still in its infancy (Hemingway 2005; Austin et al. 2006; Certo and Miller 2008). Social entrepreneurs behave similarly to commercial entrepreneurs, but “operate in the community and are more concerned with caring and helping than with making money” (Thompson, 2002; Roberts & Woods, 2005). Since social entrepreneurship is a relatively new, under-researched and still emerging as an area for academic inquiry (Austin, et al., 2006), a crucial assumption throughout the paper will be that social entrepreneurs are driven by perceptual variables similarly to commercial entrepreneurs. The hypotheses of the paper will, thus, mainly be based on entrepreneurship theory, supported by social entrepreneurship theory where possible.

The processes of starting up and running a business, as well as environmental influences on entrepreneurial activity, seem relatively similar for female and male entrepreneurs (Ahl H. J., 2002). However, the total amount of female entrepreneurs is significantly smaller than the amount of male entrepreneurs (Koellinger, Minniti, & Schade, 2005a). Some research has demonstrated that for women motivations, opportunities, and resources, as well as constraints in relation to entrepreneurship, differ compared to men (Jamali, 2009).

Existing literature suggests that perceptual variables, such as fear of failure, knowing other entrepreneurs, unexplored opportunities and confidence in one’s skills and knowledge, are of significant importance to entrepreneurial decisions (Langowitz & Minniti, 2007; Minniti & Nardone, 2007). Arenius and Minniti (2005) and Koellinger, Minniti and Schade (2005) suggest that perceptual variables are significantly correlated with new business creation (Arenius & Minniti, 2005; Koellinger,

Minniti & Schade, 2005a). The authors conclude that indeed, the perception of having sufficient skills, knowledge and ability to start a business, the perception of good business opportunities, and the perception of risk reduction generated by knowing other entrepreneurs, are the main factors related to the decision to start a business. Koellinger, et al.'s (2005) findings are consistent with the idea that individuals evaluate their business prospects by taking a subjective view of their situation, overestimate their likelihood of success, and, as a result, rely significantly on their perceptions rather than on objective chances of success (Koellinger, Minniti, & Schade, 2005a).

Fear of failure

A growing number of academics agree that fear of failure, knowing other entrepreneurs, self-confidence and opportunity recognition are amongst the most crucial drivers of entrepreneurial behavior (Arenius & Minniti, 2005; Koellinger, et al., 2005; Freytag & Thurik, 2007). Minniti and Nardone (2007) state that perceptual variables are a key factor of importance for the decision to start a business, and explain that what is important is not the fear of failure, in particular, but the degree to which it influences people's behavior (Minniti & Nardone, 2007).

Previous research shows that fear of failure is negatively correlated to the likelihood of becoming an entrepreneur. Arenius and Minniti (2005) find that fear of failure has a negative and significant impact on being a nascent entrepreneur and Langowitz and Minniti (2007) report that entrepreneurial propensity is negatively correlated to fear of failure (Arenius & Minniti, 2005; Langowitz & Minniti, 2007). One way to explain the negative effect is that because of the high fear of failure, the incentive of becoming an entrepreneur is reduced by an increasing perception of the riskiness to start a business (Arenius & Minniti, 2005)

The majority of the research done on female entrepreneurship also reports that fear of failure is negatively correlated to the probability that a female will start her own business. Some studies find that fear of failure for women may emerge from lack of respect in different countries, which reduces the probability to become self-employed (Brooksbank, et al., 2008). Being more risk averse than men is also a reason for low growth rates in female-owned companies (Johnson & Powell, 1994; Langowitz & Minniti, 2007). Koellinger, Minniti, and Schade (2005) describe that in Germany fear of failure has a negative impact on the inclination to become an entrepreneur. However, the effect is reduced once the individual is an established entrepreneur (Koellinger, Minniti, & Schade, 2005a). In another piece of work, these latter authors examine seventeen countries and find out that in sixteen of them women fear failure more than men. The differences are compatible with more distinct rates of loss aversion often observed among females, but can also demonstrate more detrimental

conditions for potential female entrepreneurs (Wagner, 2007; Dohmen, et al., 2010; Koellinger, et al., 2011).

In the Social Entrepreneurship Monitor report for UK, Hardling and Cowling (2006) report that social entrepreneurs are less likely to fear failure than the general adult population. Nevertheless, little research has been done connecting fear of failure and social entrepreneurs, which is a reason to base the first hypothesis of the paper on commercial entrepreneurship research.

Concluding from the existing entrepreneurship literature, the expectation for the results is a negative correlation between the fear of failure and the likelihood of a woman to become a social entrepreneur, which leads to the first hypothesis of the paper:

H1: Fear of failure is negatively related to the likelihood of a woman to become a social entrepreneur.

Knowing other entrepreneurs

A big part of the existing literature shows that knowing other entrepreneurs and having social networks is highly important to female entrepreneurs (Aldrich, 1999; Allen, et al., 2007; Minniti, 2010). Koellinger, Minniti and Schade (2011) state that knowing other entrepreneurs may provide relevant knowledge and social cues, and there is a high chance of it to influence subjective perceptions. Moreover, according to the authors knowing other entrepreneurs is not likely to directly influence the process of starting a new business (Koellinger, Minniti, & Schade, 2011). Knowing other entrepreneurs can act as a role model effect, leading to increased knowledge and skills and to a reduced ambiguity relating to the challenges involved (Taylor, et al., 2004; Broosbank, et al., 2008). Furthermore, it can also help potential entrepreneurs develop and increase their confidence by providing advice and support (Aldrich, 1999).

Most scholars report a positive correlation between knowing other entrepreneurs and the likelihood of becoming an entrepreneur, which is also what the second hypothesis of this paper states. To begin with, Minniti (2005) derives in her paper that there is a strong positive and significant correlation between knowing other entrepreneurs and starting a new business (Minniti M. , 2005). In collaboration with Arenius (2007), the authors confirm the aforementioned outcome to be true for being a nascent entrepreneur (Arenius & Minniti, 2005). In another paper Minniti together with Langowitz (2007) conclude that perceptual variables, including the knowledge of other entrepreneurs, are the most important factors for both genders when they have to make a decision whether to start a business, in addition to the positive relationship between knowing other entrepreneurs and the likelihood of becoming one (Langowitz & Minniti, 2007).

Langowitz, Sharpe, and Godwyn (2006) find that women who are involved in different stages of entrepreneurship appreciate networks and role models (Langowitz, Sharpe, & Godwyn, 2006). Sharpe (2001) supports that view and adds that knowing other entrepreneurs can bring business knowledge, advice and potential source of financial capital to entrepreneurs (Sharpe, 2001). However, Minniti, Arenius, and Langowitz (2005) focus on their discovery that a woman's knowledge of another entrepreneur is a strong predictor of her involvement in setting up a new business (Minniti, Arenius, & Langowitz, 2005).

According to Chell (2007) entrepreneurs use their social and personal networks in the recognition of opportunity. The author states that the core of social entrepreneurship is the ability to connect with social and community values, and through proficient networking to realize their potential (Chell, 2007). Harding and Cowling (2006) report in the Social Entrepreneurship Monitor for the UK that social entrepreneurs are significantly more likely to know an entrepreneur than the general adult population (Harding & Cowling, 2006). Thus, it can be said that social entrepreneurship networking skills are perceived to be even more important than these of commercial entrepreneurship.

To summarize, the second hypothesis of the paper states:

H2: Knowing other entrepreneurs is positively related to the likelihood of a woman to become a social entrepreneur.

Confidence

The concept that women perceive they have the knowledge and skills needed to start a new business and if they think these skills are developed enough to successfully become an entrepreneur is defined as confidence throughout the paper. Having experience, such as sufficient educational background or experience with small firms, is an important part of the definition as well. Research shows that characteristics like having the knowledge, skill and experience required to start a business, have an impact on females when choosing which career path to follow, which leads to the conclusion that confidence can affect the likelihood of women becoming an entrepreneur.

Koellinger, Minniti and Schade (2007) report that in their study a person's confidence in one's own entrepreneurial skills appears as a major driver in the decision to start a business across all countries. The authors report a stronger connection among confidence and early-stage entrepreneurs, than among individuals whose skills have been tested on the market, and state that 'perceptions about one's own skills provide a higher relative contribution to the difference between nascent entrepreneurs and non-entrepreneurs than to the difference between established entrepreneurs and non-entrepreneurs' (Koellinger, Minniti, & Schade, 2007, p. 504).

Many female entrepreneurs put themselves in activities, where the required skill set is an extension of what they have learned through gender socialization. Thus, an explanation why women can usually be found in the service industries, which are typically female-dominated fields. Almeida and Borges (2009) state that 'the approach into these areas is easier, although they produce less value' (Almeida & Borges, 2009, p. 110). According to Veira (2008), women begin their careers on paths they are familiar with, which puts an emphasis on already having experience and knowledge in the field of interest (Veira, 2008). Education, training and experience are components that are of great importance when devoting to a specific career path. Women require more confidence about their knowledge and skills than men, and pay more attention when they start a business.

According to the Social Entrepreneurship Monitor for the UK, social entrepreneurs are less confident compared to commercial entrepreneurs, but they are more likely to think they have the skills than the general adult population (Harding & Cowling, 2006). Nevertheless, since there is not much research available for social entrepreneurship and confidence in one's skills and abilities, the third hypothesis is based mainly on entrepreneurship and commercial entrepreneurship literature.

Hence the third hypothesis of the paper is formed as follows:

H3: Having the knowledge, skill and experience required to start a business is positively related to the likelihood of a woman to become a social entrepreneur.

Opportunities

Much attention is paid on perceptions and beliefs and these variables are not new to economics, but the most vital and distinctive characteristic of entrepreneurial behavior is the opportunity recognition by definition (Kirzner, 1973; Kirzner, 1979; Shane & Venkataraman, 2000; Eckhardt & Shane, 2003). Gaglio, Katz and Jerome (2001) state that 'understanding the opportunity identification process represents one of the core intellectual questions for the domain of entrepreneurship' (Gaglio, Katz, & Jerome, 2001). Entrepreneurs are more likely to recognize the existence of profit opportunities than non-entrepreneurs (Minniti & Nardone, 2007).

Sullivan and Meek (2012) believe that opportunity perceptions are related to women's social networks. The authors distinguish that women's main source to help with opportunity recognition is family. Moreover, the authors report that women's way to approach opportunities is when having previous working experience, thus identifying customer needs, whereas men establish new markets that have unmet needs (Sullivan & Meek, 2012). Scholars have found out that women seek opportunities in industries with lower growth and profitability, such as retail, compared to men

(Alsos, et al., 2006; Orser, et al., 2006), which leads to no surprise that female businesses are not growing as much as male-owned ones and are less profitable than male-owned ones (Boden & Nucci, 2000).

The majority of the research done on opportunities and their influence on the likelihood of becoming an entrepreneur shows that perceptions of opportunity are positively related to the likelihood of pursuing entrepreneurship. Langowitz and Minniti (2007) present that alertness to existing opportunities is positively correlated to women's propensity to start a business (Langowitz & Minniti, 2007). Minniti (2010) finds out that subjective perceptions about the existence of opportunities are highly and significantly correlated to the decision to become an entrepreneur (Minniti M. , 2010). Koellinger, Minniti and Schade (2011) report that, on average, 33% of the women in their study (8% less than men) say that there will be good opportunities for starting a business in the area where they live in the next 6 months, which shows that women perceive opportunities differently than men. Nevertheless, the authors find that perception of opportunities is positively correlated with starting a business (Koellinger, Minniti, & Schade, 2011). In another paper, these latter authors derive a positive relationship between perceiving good business opportunities and being a nascent entrepreneur (Koellinger, Minniti, & Schade, 2007). Arenius and Minniti (2005) also find a highly correlated connection between opportunity perception and being a nascent entrepreneur in all 28 countries in their sample (Arenius & Minniti, 2005).

According to Roberts & Woods (2005) an entrepreneur is someone 'who discovers, evaluates and exploits profitable opportunities, taking into account risk, alertness to opportunity and the need for innovation' (Roberts & Woods, 2005). Social entrepreneurs actively explore opportunities to create increased social value (Weerawardena & Mort, 2006), whereas commercial entrepreneurs seek opportunities to create profit (Minniti & Nardone, 2007). Differences in opportunity recognition among social and commercial entrepreneurs exist. Nevertheless, opportunity recognition is the core of entrepreneurship and both types of entrepreneurs are highly driven by it.

Using previous research as a base, the expectations of the paper lead to formulating the fourth hypothesis:

H4: Perceiving good opportunities for starting a business is positively related to the likelihood of a woman to become a social entrepreneur.

So far, the paper revealed the four hypotheses that are used, in order to find an answer to the research question. The 'Literature review and hypotheses' section has reviewed existing research and

literature on commercial entrepreneurship, female entrepreneurship and social entrepreneurship and has connected previous findings with the aim of the paper.

Data and Methodology

In this section of the paper, it is going to be elaborated on the data that is being used in order to achieve results, and on the methodology. A binomial logistic regression will be conducted for six different models. The variables will be defined and explained.

The data for the regression models is attained from the Global Entrepreneurship Monitor (GEM), which assesses the entrepreneurial activity, aspirations and attitudes of individuals across a wide range of countries annually (Global Entrepreneurship Monitor). The 49 countries used in this paper are chosen on the basis of the GEM 2009 Social Entrepreneurship Report (Terjesen, et al., 2012). The specific dataset used to test whether there is an impact of the perceptual variables on the inclination to become a social entrepreneur for females is the GEM 2009 APS Global - Individual-Level Data. APS stands for the Adult Population Survey and it is a comprehensive questionnaire administered to a minimum of 2000 adults in each GEM country, designed to collect detailed information.

In the Social Entrepreneurship Report by Terjesen, et al. (2012), the authors state that the most important screening factor for identifying social entrepreneurs is an explicit or implicit mention of a social mission. They classify individuals as social entrepreneurs by screening who answered with “yes” to the question “Are you, alone or with others, currently trying to start or currently owning and managing any kind of activity, organization or initiative that has a particularly social, environmental or community objective?” (Terjesen, et al., 2012). However, there is a portion of entrepreneurs that engage both in commercial and social entrepreneurship. In order to simplify the methodology and the analysis of the results, the paper will exclude the overlap between commercial and social entrepreneurship. The dependent variable is the likelihood of a female to become a social entrepreneur and is a dummy variable with values 1 for being a social entrepreneur and 0 for else.

The independent variables are the perceptual variables, which are fear of failure (*fearoffail*), knowing other entrepreneurs (*knowent*), confidence (*suskill*) and opportunity recognition (*opport*). All four variables are dummy variables. The definition of the independent variables can be seen in Table A2 in the Appendix. For *fearoffail* people were asked ‘Would fear of failure would prevent you from starting a business?’ with possible answers ‘yes’ or ‘no’. For *knowent* people were asked ‘Do you know someone personally who started a business in the past 2 years?’ with possible answers ‘yes’ or

'no'. For *suskill* people were asked 'Do you have the knowledge, skill and experience required to start a new business?' with possible answers 'yes' or 'no'. For *opport* people were asked 'In the next six months, will there be good opportunities for starting a business in the area where you live?' with possible answers 'yes' or 'no'.

The control variables include age (*age*), education (*education*), household income (*houseincome*) and country (*country_X*). Table A2 in the Appendix further explains each one of them.

In the Social Entrepreneurship Monitor for the UK, Harding and Cowling (2006) find that people in the ages of 35-44 are most likely to start a commercial enterprise, but despite that fact, the youngest age group, 18-24, are most likely to be engaged in social entrepreneurial activity. Nevertheless, the authors state that it is older people, over 45, who are most likely to run a developed social enterprise. Furthermore, Harding and Cowling conclude that while people, who are older, employed and more educated, are more likely to be running social ventures, 'there is proportionately higher levels of social entrepreneurship amongst young people, women, ethnic minorities and the labor market inactive' (Harding & Cowling, 2006).

Studies show that among individuals with higher education studies, women are more likely to start a business than men. Household income also plays a significant role as women who start a new business more likely have a low or medium level of income, unlike men (Benavides-Espinosa & Mohedano-Suanes, 2012).

In order to examine the effect of the perceptual variables on the likelihood of a woman to become a social entrepreneur, the concept of logistic regression is used throughout the paper. Field (2009) explains that the logistic regression model 'predicts the probability of an event occurring for a given person based on observations of whether or not the event did occur for that person' (Field, 2009, p. 267). This will give ground for comparing the different perceptions and establish their separate and overall impact on becoming a social entrepreneur. The summarized results of the logistic regression can be found in Table 2, where country dummies are taken into account but not included in the table.

In the paper, six different models will be used in order to test the hypotheses (Table A1). The first model includes only the control variables so that their pure effect on the dependent variable can be examined. The second model is used to test the first hypothesis, and thus, includes the independent variable *fearfail* together with the control variables. The third model investigates how knowing other entrepreneurs will influence the likelihood of a woman to become a social entrepreneur, and includes the control variables as well. The fourth and fifth model test the third and fourth hypotheses

respectively, they both include the control variables and they include *confidence* and *opport* respectively. The last (sixth) model includes all the independent variables and all the control variables as it aims to examine the combined effect on the likelihood of a woman to become a social entrepreneur. In order to understand how well the variables explain the models, there are two choices for a suitable fit for the models. Cox and Snell's R-squared is based on the log-likelihood of the model and the log-likelihood of the original model, and the sample size. However, Field (2009) states that this statistic never reaches its theoretical maximum of 1. Therefore, the author introduces Nagelkerke's R-squared and thus, the interpretation of the results will be based on it as well (Field, 2009).

Last but not least, in order to follow how the probability of a female to become a social entrepreneur changes with different variables, the following equation is worth mentioning:

$$P(\text{female social entrepreneur}) = \frac{\text{Odds}}{1+\text{Odds}} \quad (1)$$

Where P is the probability of a female to become a social entrepreneur, and Odds is the odd ratio of the certain variable which influence is being tested.

This section explained the variables used in the binary logistic regression needed to test the four hypotheses of the paper. Moreover, the six models of the paper were explained, together with the rationale behind using Nagelkerke's R-squared instead of Cox and Snell's R-squared as a model fit.

Results

In this section, the results of the six models used to test the hypotheses will be presented (Table 2).

To begin with, a correlation matrix for the variables is computed and summarized in Table 1 where country dummies are included, but not shown. There is no strong correlation between the dependent, independent and control variables. Table 1 shows that the likelihood of a woman being a social entrepreneur decreases with age ($r=-0,021$). Also, females having a higher level of education are more likely to become social entrepreneurs than females with a lower level of education ($r=0,069$). Moreover, women with higher household income are more likely to qualify as social entrepreneurs than female individuals with lower levels of income ($r=0,039$). As expected, knowing other entrepreneurs ($r=0,122$), confidence in one's skills ($r=0,106$), and opportunity perception ($r=0,091$), are positively related to being a female social entrepreneur, whereas fear of failure ($r=-0,027$) is negatively correlated with the dependent variable. Table 1 does not show any presence of collinearity among the independent and control variables.

	FemaleSE	Fearfail	Knowentr	Confidence	Opport	Age	Education	House income
FemaleSE	1							
Fearfail	-0.027	1						
Knowentr	0.122	-0.026	1					
Confidence	0.106	-0.132	0.252	1				
Opport	0.091	-0.082	0.217	0.217	1			
Age	-0.021	-0.025	-0.199	-0.081	-0.118	1		
Education	0.069	-0.033	0.095	0.095	-0.021	-0.088	1	
Houseincome	0.039	-0.023	0.137	0.133	0.072	-0.152	0.257	1

Table 1. Correlation table of all the variables excluding country dummies

Next, Model 1 is used as a basis since it contains only the control variables, which include both demographic and economic variables, such as age, education, household income and country of residence. All control variables are statistically significant at a 1% and 5% confidence level with the exception of age, which is insignificant in Model 3 and Model 6.

In most of the models, the variable *age* has a significantly negative effect on the likelihood of becoming a female social entrepreneur. The variable has an odds ratio of 0,998 on average, which is very close to 1. In order to simplify the analysis, it can be assumed that the odds ratio of *age* is approximately equal to 1, which means that there is no difference between the probability of a female to become a social entrepreneur and the probability of her to become something else with age increasing.

Education and *houseincome*, on the other hand, have odds ratios which are higher than 1 for all models. If the value of the odds ratio is greater than 1, it means that as the predictor increases, the odds of the outcome occurring increase (Field, 2009). In other words, when *education* and *houseincome* increase, the likelihood of a female becoming a social entrepreneur increases as well. Both variables are statistically significant.

The odds ratio for *education* is 1,184 on average, thus females with higher education are 18,4% more likely to become a social entrepreneur. The result is plotted in equation (1), which then equals 0,5421. Therefore, when a woman increases her level of education by 1 unit, the probability of her to become a social entrepreneur increases by 0,5421 points.

The odds ratio for *houseincome* is 1,228 on average, which means that women with higher household income are 22,8% more likely to become a social entrepreneur. Using equation (1), it

yields that when a woman increases her household income by 1 unit, the probability of her to become a social entrepreneur increases by 0,5512 points.

The country dummies are included, but not shown, in Table 2. All countries are statistically significant with the exception of Argentina, Chile and Norway. For Argentina, Chile and Norway, it can be said that, since they are insignificant, they are not statistically different from the reference country, namely the USA. All countries have odds ratios less than 1, thus it can be said that they are negatively related to the likelihood of a female becoming a social entrepreneur compared to the USA. Therefore, females are most likely to be a social entrepreneur in the USA.

Model 1 has a Nagelkerke R-squared of 0,095, meaning that only 9,5% of the variation of the dependent variable is explained by the variation of the independent variables.

In Model 2, the effect of fear of failure is tested. Unfortunately, *fearfail* is not significant.

However, in Model 3, the effect of knowing other entrepreneurs is tested, and the independent variable is significant. The odds ratio is very high compared to the remaining variables in the table, equal to 2,566. The last result means that when a woman knows other entrepreneurs, she is 156,6% more likely to become a social entrepreneur, than when she does not know any other entrepreneurs. Moreover, using equation (1), the likelihood of her becoming a social entrepreneur given that she knows other entrepreneurs increases with 0,7196 points.

Confidence in one's skills and knowledge in Model 4 is significantly related to the likelihood of a woman to become a social entrepreneur. The variable has an odd ratio is equal to 2,413, meaning that when a woman is confident in her own skills and knowledge, she is 141,3% more likely to become a social entrepreneur. A 1 unit increase of confidence increases the likelihood of a woman to become a social entrepreneur by 0,7085 points when using equation (1).

The effect of perceiving opportunities on the dependent variable is examined in Model 5. The perception of opportunities has a positive coefficient and an odds ratio of 1,916, which leads to a 91,6% higher likelihood of a woman to become a social entrepreneur when perceiving opportunities. In result of using equation (1), an increase of the perception of opportunities with 1 unit leads to a 0,6571 points increase in the likelihood of the dependent variable to happen.

In Model 6, the overall effect of the four perceptual variables – fear of failure, knowing other entrepreneurs, confidence and perceiving opportunities, is tested of the likelihood of a woman to become a social entrepreneur.

Compared to Model 2, in Model 6 *fearfail* has an odds ratio which is higher than 1 – 1,028, but it remains insignificant.

A female that knows other entrepreneurs is 109,2% more likely to become a social entrepreneurs, than one that does not know other entrepreneurs, because, similar to Model 3, the odds ratio of *knowentr* is very high – 2,092. The likelihood of a female increases by 0,6766 points when a woman knows other entrepreneurs.

Similar to Model 4, in Model 6 a woman that is confident in her own skills and knowledge, is 93,5% more likely to become a social entrepreneur, because of the odds ratio of the variable *suskill*, which is 1,935. Close to when knowing other entrepreneurs, the probability of a woman to become a social entrepreneur increases with 0,6553 points when she is confident in her own skills and knowledge.

Last but not least, when being able to perceive opportunities, a woman is 50,9% more likely to become a social entrepreneur. The odds ratio of the perceptual variable *opport* in Model 6 is lower than the one in Model 5, unlike the other three perceptual variables. The odds ratio of the variable *opport* is 1,509 and when a woman is able to perceive opportunities, this increases the likelihood of her to become a social entrepreneur by 0,6013 points.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Coefficient (std. error)	Coefficient (std. error)	Coefficient (std. error)	Coefficient (std. error)	Coefficient (std. error)	Coefficient (std. error)
<i>Perceptual variables</i>						
Fear of failure		-0,046 (0,044)				0,028 (0,048)
Knowing other entrepreneurs			0.942*** (0,045)			0,738*** (0,050)
Opportunity perception				0,888*** (0,046)		0,660*** (0,052)
Confidence in one's skills					0,650*** (0,047)	0,411*** (0,049)
<i>Control variables</i>						
Age	-0,003** (0,001)	-0,005*** (0,002)	0 (0,002)	-0,004*** (0,002)	-0,004** (0,002)	0,001 (0,002)
Education	0,226*** (0,021)	0,185*** (0,024)	0,158*** (0,024)	0,160*** (0,024)	0,164*** (0,025)	0,119*** (0,026)
Household income	0,231*** (0,025)	0,229*** (0,029)	0,188*** (0,029)	0,188*** (0,029)	0,231*** (0,030)	0,164** (0,031)
<i>Model diagnostics</i>						
Constant	-2.681***	-2,157***	-2,697***	-2,575***	-2,355***	-2,931***

	(0,099)	(0,116)	(0,117)	(0,116)	(0,120)	(0,132)
N	67388	44303	45312	44388	39124	37075
Overall % correct predictions	95,1	94,2	94,3	94,2	94,1	94
R2	0,095	0,015	0,143	0,141	0,135	0,169

Table 2. Binary logistic regression on female social entrepreneurs sample

After discussing the results of all six models of this paper, it is time to look at the Nagelkerke R-squared. The base model – Model 1, has the lowest R-squared. For models 1, 2, 3 and 4 Nagelkerke’s R-squared increases compared to the base model, which means that adding a new variable to the base model improved the explanatory power of the new model. Model 6 has the highest Nagelkerke R-squared equal to 0,169. Therefore, this means 16,9% of the variation of the dependent variable is explained by the variation of the independent variables. Adding all perceptual variables in Model 6 proves to have added value since it has the highest R-squared and improved the explanatory power of the model.

In this section, the paper presented the results of testing the four hypotheses supporting the research question. Next, the results will be discussed, they will be applied to the hypotheses, in order to see if the hypotheses are accepted or rejected, and last but not least, they will be compared to existing literature.

Discussion

The purpose of this study is to investigate what impact do perceptual variables have on the likelihood of a woman to become a social entrepreneur. Much work has been done on the influence of perceptions on men and women’s decisions to become either an entrepreneur, or more specifically, a nascent entrepreneur. However, the literature on social entrepreneurship concerning perceptions is very scarce.

The analysis in this paper show that, although fear of failure being insignificant in the second model, the relationships between the likelihood of starting a social enterprise and fear of failure, knowing other entrepreneurs, being confident in one’s skills and perceiving opportunities are significant and do influence the dependent variable.

Although the variable ‘fear of failure’ is insignificant in both Model 2 and Model 6, the reversal of its sign with the addition of the other variables is still obscure. A possible explanation would be that fear of failure is in general negatively related to the dependent variable at most levels of the other

independent variables with a number of very few exceptions where it is positively related. If these few exceptions include the specific baseline scenario of the multivariate model, the results would be explained. In the same time multicollinearity need not be present if this is true. Each independent variable does not need to be individually correlated with fear of failure, but it can be correlated only in combination of the other independent variables kept at their baseline scenario levels. Thus, it can be concluded that the first hypothesis is partially accepted.

Both Model 2 and Model 6 show that personal connections and knowing other entrepreneurs are of influence, when a female decides to start a new social enterprise. If the woman knows other entrepreneurs, they can be of help and support to her to start a new business, which has a positive impact on her. Langowitz and Minniti (2007) have similar conclusions. However, they add that knowing other entrepreneurs is simply not enough in order to elaborate further on the reason of the impact of the variable. What can be said is that *knowent* indicates the fact that knowing other entrepreneurs may have an impact on 'the perception of entrepreneurial opportunities by providing social clues in the uncertain environment characterizing the creation of a new business' (Langowitz & Minniti, 2007, p. 349). Nevertheless, the second hypothesis is proven to be accepted.

The results of this paper exhibit a strong positive and significant correlation between self-confidence, opportunity perception, and the likelihood of a woman to become a social entrepreneur. The results are consistent with the third and fourth hypotheses of this paper, but they also suggest that perceptual variables play an important role on the inclination of social entrepreneurial propensity. Langowitz and Minniti (2007) discuss that, in fact, one's perceptions and actual abilities and risk levels are likely to be biased. Moreover, the authors mention that distortions in perceptions are highly likely to be observed among entrepreneurs (Langowitz & Minniti, 2007).

Conclusions and limitations

This paper examines which perceptual variables are of influence of a woman to become a social entrepreneur. GEM data is used to estimate binominal logistic regression models for the likelihood of a female to become a social entrepreneur, where social and demographic variables are considered. Later, perceptual variables are added to test the hypotheses of the paper. The results suggest that the addition of perceptual variables improves the statistical fit of the model. As Arenius and Minniti (2005) claim in their study, entrepreneurship is about people and, not surprisingly, subjective and often perceptions are biased (Arenius & Minniti, 2005). So far, no previous research had incorporated perceptual variables at the individual level concerning females and social

entrepreneurship. The results of this paper suggest that it is appropriate to do so. Moreover, there is a gap in female social entrepreneurship literature, which this paper strives to fill.

The outcomes of this paper imply that perceptual variables are of important influence on women becoming social entrepreneurs. Of highest positive impact and significance are knowing other entrepreneurs, having confidence in one's skills and knowledge, and perceiving opportunities. The findings of this paper are consistent with what the literature states so far both for entrepreneurship in general and for social entrepreneurship in particular (Arenius & Minniti, 2005; Koellinger, Minniti, & Schade, 2007). What is more, the findings also support the expectations in the beginning of the paper. The effect of fearing failure on the likelihood of becoming a social entrepreneur is unclear because the variable is insignificant. Therefore, further research on the influence of fearing failure on the decision to start a social venture should be done.

Overall, it is confirmed that perceptual variables play a role in social entrepreneurship the same way as in commercial entrepreneurship with the exception of fearing failure. Throughout the paper, several limitations have arisen together with suggestions for further research. First, only 49 countries are used in the Social Entrepreneurship Monitor, which this study follows (Terjesen, et al., 2012). A bigger sample of countries will give more accuracy to the results and thus the generalizations made from them. Second, the number of female social entrepreneurs in every country is very small, on average around 2% of the people interviewed. Furthermore, social entrepreneurship is expanding and developing as a field and is relatively new, which might influence the low number of female social entrepreneurs. Third, in attempting to identify the perceptual variables explaining the creation of a new social venture, no claims for causality are made. As Arenius and Minniti (2005) state 'the data, unfortunately, does not allow us to establish the causal direction of the relationship' (Arenius & Minniti, 2005, p. 243). Last but not least, the effect of fear of failure should be further researched on the likelihood of a female to become a social entrepreneur, in order to see what the influence of the perceptual variable is and if it coincides with the influence of fear of failure on commercial entrepreneurship.

Appendix

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
<i>Perceptual variables</i>						
Fear of failure		+				+
Knowing other entrepreneurs			+			+
Opportunity perception				+		+
Confidence in one's skills					+	+
<i>Control variables</i>						
Age	+	+	+	+	+	+
Education	+	+	+	+	+	+
Household income	+	+	+	+	+	+
Countries	+	+	+	+	+	+

Table A1. Model descriptions

Type of variable	Variable description	Name of variable	Total (number)	Total (%)
<u>Dependent variable</u>				
The likelihood of a female becoming a social entrepreneur	Q6A1. SPECIAL TOPIC 2009: Are you alone or with others, currently trying to start or currently owning and managing any kind of activity, organization or initiative that has a particularly social, environmental or community objective? If gender = female Dummy variable 1 – if social entrepreneur, 0 - else	femaleSE	4014	2,2
<u>Independent variables</u>				
Knowing other entrepreneurs	Qi1. Do you know someone personally who started a business in the past 2 years? Dummy variable 1 if "Yes", 0 if "No"	knowent	129543	70,8
Opportunities	Qi2. In the next six months, will there be good opportunities for starting a business in the area where you live? Dummy variable 1 if "Yes", 0 if "No"	opport	112304	61,3
Skills and knowledge	Qi3. Do you have the knowledge, skill and experience required to start a new business? Dummy variable 1 if "Yes", 0 if "No"	suskill	126846	69,3
Fear of failure	Qi4. Would fear of failure would prevent you from starting a business? Dummy variable 1 if "Yes", 0 if "No"	fearfail	126810	69,3
<u>Control variables</u>				
Education	What level of education have people obtained? Categorical variable Five outcomes: None, Some secondary, Secondary degree, Post secondary, Graduate experience	education	180336	98,5

Age	What is your current age (in years)? Continuous variable Absolute number	age	179568	98,1
Household income	GEM income recoded into thirds Categorical Variable Lower 33%tile, Middle 33%tile, Upper 33%tile	houseincome	140918	77
Country	Respondents were asked their country of residence. Dummy variable If "Country X" = 1, if "other" = 0 Reference country: USA USA, Algeria, Argentina, Belgium, Bosnia and Herzegovina, Brazil, Chile, China, Colombia, Croatia, Dominican Republic, Ecuador, Finland, France, Germany, Greece, Guatemala, Hong Kong, Hungary, Iceland, Iran, Israel, Italy, Jamaica, Jordan, Korea, Latvia, Lebanon, Malaysia, Morocco, Netherlands, Norway, Panama, Peru, Romania, Russia, Saudi Arabia, Serbia, Slovenia, South Africa, Spain, Switzerland, Syria, Uganda, Uruguai, UK, United Arab Emirates, Venezuela, West Bank & Gaza Strip	country_X	179409	97,8

Table A2. Variable definition and un-weighted descriptive statistics, Global Entrepreneurship Monitor (GEM) data 2009

Base: N= 183074

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