

FACTORS THAT DRIVE FEMALE ENTREPRENEURSHIP IN ARMENIA

Meri Hayrapetyan

Master Student – IPB' Master in Management

Escola Superior de Tecnologia e Gestão do Instituto Politécnico de Bragança

Campus de Santa Apolónia

Alcina Nunes

Professora Coordenadora na Escola Superior de Tecnologia e Gestão do Instituto Politécnico de Bragança

Escola Superior de Tecnologia e Gestão do Instituto Politécnico de Bragança (Gab. 61)
Campus de Santa Apolónia

Karen Turyan

Professor in the Management Department of the National Polytechnic University of Armenia

Management Department of the National Polytechnic University of Armenia

Scientific Area: Management and Administration

Keywords: Entrepreneurship, gender, Logistic regression, World Bank Enterprises Survey, Armenia

Factors that drive Female Entrepreneurship in Armenia

Abstract

Entrepreneurs play a key role in any economy. Entrepreneurship includes creativity, innovation, risk taking, planning and management and is described as transferring ideas into action. In the light of recent world events, female entrepreneurship has become a crucial area to study and understand, especially with respect to motivations, obstacles, constraints and consequences of female entrepreneurship. The research work focuses on female entrepreneurship in a developing country - Armenia – and proposes a conceptual framework of the phenomenon. A logistic regression econometric method is applied to the dataset of World Bank (2013) to identify and measure the relationship between female entrepreneurship and several factors such as the location, size, legal status, market and obstacles faced by Armenian firms.

Scientific Area: Management and Administration

Keywords: Entrepreneurship, gender, Logistic regression, World Bank Enterprises Survey, Armenia

1. Introduction

Entrepreneurship is a crucial area for the world economies and plays a key role in economic development. It is a driver for economic growth, employment, innovation and productivity. Entrepreneurship is considered central to the functioning of market economies (OECD, 1998). Entrepreneurship is also considered a way for determining opportunities and developing possibilities (Ferk, Quien & Posavec, 2013). Different motivational factors influence on people decision to become an entrepreneurs and this factors are different across the countries, stereotypes, education and gender. Nowadays the phenomenon of female entrepreneurship is becoming a global issue and researchers continue to explore the characteristics, motivations and barriers of female entrepreneurs. Still, despite of the growing number of initiatives and resources to promote and develop female entrepreneurship, women entrepreneurs are in a minority all over the world economies. Different studies identified the reasons of women's low participation on entrepreneurial activity. Some of them found the problem in an uncertain environment, social networks and embeddedness (Minniti 2005), while others thought that in most cases women entrepreneurs are less "visible" (De Bruin, Brush & Welter, 2006). Ahl (2006) and Vossenbergh (2013) interpret it as risk-aversion and lack of educational skills.

Entrepreneurship is an important goal in every economy but particularly in transition economies like Armenia. Comparing with more development countries, Armenian entrepreneurs are motivated to start a new business motivated by financial reasons, to be one's own boss, due to the lack of a suitable job and/or the fear to lose one (Kuriakose, 2013). Gender roles and society stereotypes (ADB, 2015), high taxes, sales problems, bureaucratic requirements and corruption (Alanakyan, 2014) are other problems that women in Armenia may face. In spite of existing difficulties and barriers, different organizations, even governmental, cultivate various strategic plans and projects in order to promote and encourage female entrepreneurship in Armenia.

With the significant increase in women-owned businesses and the lack of empirical studies on this specific research topic, particularly in transition economies, the study seeks to analyse the phenomena of female entrepreneurship in Armenia, exploring the level of women's participation in country's entrepreneurial activity, identifying and measuring the main factors that motivate and/or obstacle women to run a business based on the existing problems and opportunities. To accomplish the purpose of this research in the work was used microdata of the 2013 World Bank Enterprises Survey for Armenia. A set of 360 establishments in manufacturing and service sectors of the country participated in the survey.

Logistic regression was used to mathematically measure the relationship between female entrepreneurship and several factors that can help to explain women entrepreneurial activity in Armenia. This econometric method that can only be applied to microeconomic data, provides a statistical framework that indicates if (and how much) independent variables (gender of top managers, location, size, market, origin of inputs and social, fiscal, legal and economic obstacles) can adequately predict female entrepreneurship (dependent variable) in the country. The method was chosen because the variable that will be explain is dichotomous – since female entrepreneurship is a variable that cannot be measure it is used a variable that indicates if the firm is owned by a women or not – and the logistic regression is one of the most suitable and common econometric methods used in this situation.

The work is organized as follows. In section 2 is discussed the literature on entrepreneurship, in general, and female entrepreneurship, in particular. Are presented the factors and motives that influence on the individuals' (especially the women) decision to become an entrepreneurs in Armenia. In section 3 is presented the objective of the study, the World Bank Enterprises Survey dataset and the logistic regression econometric methodology used to reach the objective. Section 4 presents the results of the logistic regression method. At the same time is made the discussion of such results. The work concludes with the main findings.

2. Theoretical framework for female entrepreneurship

The entrepreneurship as a subject of scientific research “has flourished in recent years and is evolving rapidly” (Carlsson et al., 2013, p. 913) although the extensive history and tradition of the entrepreneurship term. Indeed, Carlsson and his co-authors (2013) present a comprehensive description of the entrepreneurship concept and its evolution over time, since the origin of the term, used by the French in the medieval age, passing through the seminal work of Schumpeter, that introduce the role of entrepreneurship in economic development, until few decades ago where the concept start to arouse attention of researchers and started to be a highlighted theme in the scientific literature. More recently entrepreneurship research is being developed in new several sub-fields which importance has been assumed just in recent times. It is the case of social entrepreneurship, family entrepreneurship, academic entrepreneurship or female entrepreneurship, for instance.

“Female entrepreneurs are defined as those who use their knowledge and resources to develop or create new business opportunities, (...) who are actively involved in managing their businesses, are responsible in some way for the day-to-day running of the business, and have been in operation for longer than a year” (Anwar & Rashid, 2011, p. 6). In the opinion of Debroux (2010, p. 5) women entrepreneur is a “women who is a *de facto* owner or co-owner of a business, is involved in its daily management and is a key decision maker for devising the business strategy”. However, the definition of female entrepreneurship is slightly different from country to country, as states Debroux (2010). In South Korea female entrepreneurial activity is defined as a company owned by a women. In India, women entrepreneurship is based on women participation in equity and employment of a business enterprise. “An enterprise owned

and controlled by a women having a minimum financial interest of 51% of the capital and giving at least 51% of the employment generated by the enterprise to women” (Sharma, 2013, p. 9). McAdam and Roper (2013) support the definition of female entrepreneurship quoting Marlow, Carter and Shaw (2008, p. 339). According to them, in United Kingdom (UK), a women-owned business is “one that is either wholly or majority owned by one or more women“. According the same study, quoting the US Census Bureau (2002), a women-owned business in US is the one where the owner or the majority of shareholders are female and the female owners/shareholders own at least 51% of the business.

In a way to summarize the factors that drive female entrepreneurship, it is possible to claim the different set of reasons and motivating factors stimulating women to start up a new business depends on countries, cultures and stereotypes. According to Akehurst, Simarro and Mas-Tur (2012) like their counterparts, women establish entrepreneurial activity for many reasons: extrinsic, intrinsic or transcendental nature. Motivation of intrinsic and transcendental nature dominate among women, whilst extrinsic reasons are motivated men to create a business.

Intrinsic and transcendental factors include desire for independence, self-realization and internal control, perseverance and an interest in taking up the challenges posed by creating a new firm, the opportunity to develop their personal skills and experience and the chance to influence their own destinies (see, for example, the results of the studies conducted by Schwartz (1976), Scott (1986) or Lee and Rogoff (1997) in different periods of time). Nelson and Cengiz (2005) support the same motives and also find a significant relationship between innovativeness, risk taking propensity and perseverance with women motivation. A desire for self-fulfilment, job satisfaction and self-determination/independence are also crucial reasons for women to start a business (Bennett & Dann, 2000; Kepler & Shane, 2007; Walker & Webster, 2007). Buttner and Moore (1997) and Wilson, Kickul and Marlino (2007) found that self-efficacy affects entrepreneurial intention and it is stronger for women than for men. The extrinsic nature that drive more men than women to start up a business is characterized by self-employment and the desire to avoid unemployment. However in some economies they may be as important as other reasons. For example, as noted Idrus, Pauzi and Munir (2014) the business owners in Turkey might be more motivated by extrinsic factors (such as increasing income and creating a job for themselves) than by intrinsic or independence motives, while Watkins and Watkins (1984) observed new business creation as a strategy of women who leave the job market for family reasons and McGowan et al. (2012) observed entrepreneurship as an alternative form of female employment.

Another important division of the factors that drive female entrepreneurship is presented by Ali and Mahamud (2013). The factors that incentive women to start a new business can be distributed into “push” and “pull” factors. Pull factors encourage women to start a business and push factors force women to start business (Mordi, Simpson, Singh, & Okafor, 2010). Lacob and Nedelea (2014) associate push factors with necessity and pull factors with possibility to lead. Push factors are determined by financial needs (Jesurajan & Gnanadhas, 2011), dissatisfaction with the current job, difficulty in finding work and the need for flexible work (Chelliah & Lee, 2011). Pull factors are associated with independence, achievement, and desire for wealth, social status and power.

Generally, firms created by women have a small-size mainly at the micro and small levels. Because the firm’s size is considered as a basis for measuring the firm’s performance, the small size of female businesses it is seen as a weakness. Many studies identify the reasons why the firms created by women are small-sized. Akehurst et al. (2012) listed the difficulties related with the access to finance, the lack of specific knowledge and training and the fear of taking risk. The Asian Development Bank [ADB] (2015) found that women constitute only a small number of start-ups and make up (considerably less than half of all business owners).

Various barriers discourage women from starting and expanding businesses: limited business knowledge, skills (especially marketing skills) and confidence, exclusion from business networks and the difficulty of balancing family responsibilities with business. These factors are also a reason why women run small-scale businesses concentrated in trade, services, small scale production and home-based production.

Entrepreneurship is an important goal in every economy, however many financial, bureaucratic, and social barriers obstruct to start a new business particularly in countries with transition economies (Atasoy, 2015). In transition countries, female entrepreneurship presents a core factor for their development (Ferk et al., 2013). Still, Zwan, Atasoy, Tiongson and Sanchez-Paramo (2013) and Kuriakose (2013) found that women less likely become active entrepreneurs as their male counterparts. “Despite the fact that women in transition economies have similar levels of education, training, and skills as men, they are less likely to become entrepreneurs” (Kuriakose, 2013, p. 13).

Armenia is a typical example of a transactional economy. “Armenia’s entrepreneurial culture is built largely on the very strong math and science foundation established during the Soviet era” (Kuriakose, 2013, p. 3), nevertheless there are several factors and barriers which hinder business growth and entrepreneurship. The economic activity of the country is concentrated in Yerevan (the capital), so the regions suffer from limited exposure to markets, new technologies and business services. The services related to entrepreneurship, business training, marketing, technology development and information are available only in Yerevan (Alanakyan, 2014). SMEs traditionally play an important role in the economic growth, employment generation and poverty reduction. As states Kuriakose (2013, p. 29) “business owners in Armenia reported the top two reasons as sensing an opportunity to make more money and wanting to be one’s own boss“. Another important reasons for starting a business are not finding a suitable job and fearing to loss it. Gender roles and stereotypes have a significant impact on Armenian society, mainly notions about “permissible” roles for women and men. Despite women’s achievements in several fields, strong perceptions related to the private and family sphere are still prevalent for Armenian women, and in most cases limit their opportunities for self-realization in public life. Gender stereotypes contribute to women’s lower levels of representation in politics, in formal employment and as business leaders (ADB, 2015).

As was reported by Wältring (2013, p. 7) “55% of women and 73% of men are economically active in Armenia. When it comes to the analysis of women as entrepreneurs the statistical data refers to 32% of women as registered owners of enterprises. This percentage does not, according to studies, represent the reality”. One of the probable reasons is that in Armenia is common practice for men to register a business in the name of a female family member, usually the wife, in order to hide their current business and also reduce the risks of debt payments. In reality, these female “business owners” are not controlling the operation of the business or participating in decision making process. Officially, women have a business registered in their name, “but [they] are not even aware of its activity”. Even specific lines of credit established for women’s businesses are taken by women but used by men (ADB, 2015, p. 51).

Women engaged in business, especially at the micro level and outside of large cities even in Armenia. “Women in Berd and Goris (the cities of Armenia) who had experience with home production of vegetables and fruits explained that it is very time-consuming to sell home-grown products, and because they cannot access larger markets, they found it easier to sell their products to a distributor with lower price“ (ADB, 2015, p. 57). In Goris, one of correspondent (who started a jam-making venture) mentioned that little knowledge of market constraints, licensing and taxes are too prohibitive to continue the business. Monopolies also play a role in limiting women’s ability to sell their products in certain stores. Hospitality is a promising sector for Armenia’s businesswomen for several reasons. According to a United States Agency for

International Development (USAID) assessment, women continue to dominate in only one value chain in Armenia: hospitality. In 2011, women represented 53.9% of employees working in accommodation and food service activities, which is a close proxy for employment in the tourism industry (ADB, 2015). Networking and marketing opportunities in tourism industry are easier for women: flexible hours are more often the norm; and big business does not yet dominate. In rural areas, in particular, tourism-related businesses are often home-based (e.g., running a guesthouse or making souvenirs to sell on tourist routes), which allow them to divide their time between work and family responsibilities.

In a study conducted by Alanakyan (2014), based on the SME DNC databases accompanied with the State Register database, the results show that in Armenia the main obstacles for women in running business are high taxes, sales problems and cost and quality of the utilities. Male and female entrepreneurs certainly face many common problems such as unfavourable tax rates, bureaucratic requirements and corruption. Nevertheless predominating gender norms also play a crucial role in obstructing women's ability to start and run a business. The hard economic situation and the high level of emigration, resulting in decreasing number of clients, are the most concerning issues for all sectors and groups of businesses independently of the business owner's gender. Among gender-specific issues, societal attitudes and lack of confidence toward Armenian women entrepreneurs are also identify as a barrier.

According to Armenian law, women and men have equal rights to ownership and use of land and other property, while in practice, women are the minority of registered property owners. It is based on traditions of registering property in the name of male family members and passing it down to male heirs. Also, women's earning power is less than men's, limiting their opportunities to independently purchase property such as land, homes, buildings or vehicles. Another crucial obstacle for female entrepreneurs is limited access to commercial loans. There is misconception that women cannot access credit regarding to lack of business experience, high interest rates and personal aversion to taking on risk (ADB, 2015). When women have joint ownership, or even full legal ownership, it is common for "the father, the brother and then the husband [to] take care of the property which by law is owned by the woman/wife" (ADB, 2015, p. 55). Participants from Ashtarak identified that bank loans are generally not available for start-ups and borrower must show 6 months of experience. Participants in several regions stated that also interest rates are very high—about 24%—and they "kill businesses." Besides of high rates, the repayment period is very short, and this is incompatible with the type of women business (ADB, 2015).

In spite of the low level of female entrepreneurship in the country there are many national organizations which support and promote women entrepreneurs. In 2010, the Armenian government promoted a strategic plan regarding to Gender Policy 2011-2015. The project aimed to finance female projects, help to increase the volume of credit programs for women leading SMEs, the number of female businesses and qualified female employment opportunities. As show the research result, Armenian women run their businesses in areas with low entry barriers and often with a lack of long-term competitiveness and low specialisation. They enter into markets with a relatively high saturation and high price competition such as service and trade sectors. The majority of female entrepreneurs are most often involved in service-providing businesses, generally in familiar areas or spheres which cater to other women: tailoring, beauty salons, entertainment, hospitality and tourism (e.g., running guesthouses), education (e.g., child care, private kindergartens or tutoring), culture (e.g., dance or music lessons), and consulting. In regions of Armenia women undertake food production such as cheese making, milk processing, growing herbs, drying fruits and baking.

In 2011, the National Agency for the Promotion of Small and Medium-sized Entrepreneurs has developed a comprehensive strategy directed to SMEs. The strategy entailed a chapter on women entrepreneurship report (Wältring, 2013). In 2013, the same agency, supported by the ADB, started to develop the Women Entrepreneurship Strategy (WES). The purpose of the project is to increase women's participation into businesses as qualified employees as well as entrepreneurs since women are considered a great untapped entrepreneurial resource (Atasoy, 2015). At the same time, the government has sponsored national awards for female entrepreneurs, an important step toward developing a positive image of businesswomen and promoting their successes to the wider society.

Apart from national and international organisations (both governmental and non-governmental) there are also donors who have started to support the economic and political empowerment of women. According to Wältring (2013, p. 11) the OSCE has started to promote Women's Resource Centres Network in Syunik providing resources and supporting women to start a business. Armenian Young Women's Association (AYWA) is another important stakeholder who is also expressing female business interests. The association has a strong role in promoting female businesses and networks in the rural areas outside Yerevan.

Despite the creation of public organizations and the continuous work of several donors, the institutional infrastructure of such organisations and Business Development Services (BDS) are still very weak. SME DNC, for example, support training on start-up promotion, business planning, tax advice and accounting but, despite its efforts, cannot satisfy the general demand of SMEs and the particular demand of female entrepreneurs. These difficulties coexist with the lasting dominant social stereotypes deeply rooted in the belief that business development is mainly the responsibility of men. In simultaneous many women do not see themselves as entrepreneurs due to a lack of self-confidence. For both of these reasons their businesses are settled dominantly in traditional activity areas, where the role of women is both accepted and recognised by society. However, this mind-set is changing in the larger cities like, for example, Yerevan where behaviour stereotypes are different from other regions. The main challenges for women entrepreneurship promotion in Armenia go through the development of more knowledge intensive services, the increase of the value added in production sectors (like e.g. advance processing of agricultural products) as well as the development of new and more processed products in the manufacturing sector. So it will increase the business opportunities particularly the sustainability of female businesses.

3. Methodology and objectives of the research

The main purpose of the research is to analyse the phenomena of female entrepreneurship in Armenia identifying and quantifying the factors that drive female entrepreneurship in a country in economic transition.

The lack of statistical information is a problem when analysing this phenomena but, due to the efforts of the World Bank Enterprise Survey, is possible to shed some light on the theme using a cross-sectional database collected in 2013. To reach of the main goal of this research work data from the World Bank Enterprise Survey in Armenia (2013) is used. An Enterprise Survey is a firm-level survey associated to the private sector of the economy. The surveys have been conducted since 1998 by different units within the World Bank. Since 2002, the World Bank is collecting data through face-to-face interviews with top managers and business owners in over 130,000 companies in 135 economies. From November 2012 to July 2013 was conducted the survey in Armenia. The objective of the research was to receive feedback of Armenian enterprises operating in the private sector particularly, in manufacturing and services sectors.

Data from 360 establishments was analyzed and the surveyed businesses were selected through stratified random sampling method. For this work in particular were selected variables like gender of top managers, region, size and market of the firms and the main obstacles faces by entrepreneurs in Armenia. Several logistic simple regression equations have been estimated. Each variable selected to explain female entrepreneurship has been include in an equation were the probability of a female be the owner of the firm is estimated.

“Logistic regression was proposed in the 1970s as an alternative technique to overcome limitations of Ordinary Least Square (OLS) regression in handling dichotomous outcomes” (Peng, Lee, & Ingersoll, 2002, p. 31). If the objective of both models is the same, this is, to find the best fitting model to describe the relationship between one or more explanatory variables and one dependent variable, the logistic model differs due to the dichotomous characteristic of the dependent variable.

Indeed, the key difference between the models is that in the linear regression model the outcome variable is assumed to be continuous, while in the logistic regression model the variables that is trying to be explained as a dichotomous nature. The dependent variable is a dummy variable represented by only two values, 0 and 1. If occurs a given event, that is represented by one (1). If the event not happens, the result is zero (0). So, due to this characteristics of the dependent variable the predicted values of the model are probabilities and are restricted to the set of values (0, 1). The variables can be characterised by a Bernoulli distribution for each is possible to observe the probabilities of occurrence. The probability of an event occurrence and its inverse are given by the following equations, respectively:

$$P(Y = 1) = p \quad (1)$$

$$P(Y = 0) = 1 - p \quad (2)$$

So, by definition, the proportion of situations where it is observable the occurrence of the event, this is, $Y = 1$, will be given by the following expression:

$$E(Y) = 1 \times p + 0 \times (1 - p) \quad (3)$$

Let Y be the variable that a researcher wants to explain (the dependent one) and X the set of variables that explain the behaviour of the first (the independent variables), the model that relates them, with β_0 the constant coefficient, $\beta_{1,2,\dots,n}$ the coefficients of the independent variables $X_{1,2,\dots,n}$ and, ε is the error of prediction that expresses the observation's deviation from the conditional mean, is represented by

$$Y = \beta_0 + \beta_1 X + \varepsilon, \text{ if the model as only one explanatory variable} \quad (4)$$

And,

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots \beta_n X_n + \varepsilon, \text{ if the model as } n \text{ explanatory variable} \quad (5)$$

Since for dependent dichotomous variables, $0 \leq E(Y|X) = P(Y = 1|X) \leq 1$, it had been proved that should be adopted a logistic function that, graphically, is represented by an S-shaped curve with increasing values in the range $[0, 1]$ (Hosmer, Lemeshow, & Sturdivant, 2013) and, algebraically, should be represented by:

$$P(Z) = e^Z / (1 + e^Z) \quad (7)$$

With, in the case of the model with multiple explanatory variables:

$$Z = \text{logit}(p) = \ln \frac{p}{1-p} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + \varepsilon \quad (8)$$

The relation between the probabilities of an event occurrence and the event no occurrence is known as the odds ratio of probabilities, this is, with $p = P(Y = 1)$, the odd-ratio is given by the mathematical expression (Joseph, Nicholas, & Cox, 2000):

$$\text{odds ratio} = \frac{p}{1-p} \quad (9)$$

When, the model as only one explanatory variable, the odds ratio is equal to $\exp(\beta)$, or sometimes written as e^β . This is, if one takes the exponential function and raise it to the power of β one gets the odds ratio that, in logistic regression empirical analysis, are the results economically interesting to analyse.

4. Logistic method results and analysis

The following tables included the results of logistic regression. For the variables with statistical significance (observable through the p-value) is presented the estimated logistic coefficient (with a mathematical but no economic real meaning) and the odd-ratio - this is, the ratio between the probability of an event occurrence (or the success of the event) and the probability of its no occurrence (or the failure of the event) – which presents an easier interpretation of the results. Besides the results of the estimation, and the number of observations used in each estimation, are also presented several post estimation results which intend to show the level of adjustment precision: A Pseudo- R^2 , the Wald χ^2 , the percentage of observations correctly classified and the ROC curve.

The respective regression logistic models were estimated using a standard error robust estimation to avoid problems of heteroscedasticity. For the variables with statistical significance (observable through the p-value) is presented the estimated logistic coefficient (with a mathematical but no economic real meaning) and the odd-ratio¹ - this is, the ratio between the probability of an event occurrence (or the success of the event) and the probability of its no occurrence (or the failure of the event) – which presents an easier interpretation of the results. Besides the results of the estimation, and the number of observations used in each estimation, are also presented several post estimation results which intend to show the level of adjustment precision: A Pseudo- R^2 , the Wald χ^2 , the percentage of observations correctly classified and the ROC curve.

When estimating a logistic regression, a statistic equivalent to the well-known ordinary least square model (OLS) R^2 does not exist. The estimated results of a logistic regression are maximum likelihood estimates obtained through an iterative process, and not calculated to minimize variance, so only a Pseudo- R^2 had be developed. But, even ranging from 0 to 1, it cannot be interpreted intuitively as the traditional OLS R^2 and its value is, normally, very small (Long & Freese, 2014). The Wald χ^2 test, with one degree of freedom, is retrieved when the logistic regression estimation is applied using robust standard errors. This tests if the estimated

¹ The odd-ratio indicates how the probability of a 'success' changes with a one unit change in the independent variable. In general, if the odd-ratio is equal to 1, 'success' and 'failure' are equally likely, if the odd-ratio is bigger than 1, 'success' is more likely than 'failure' and if the odd-ratio is smaller than 1, 'success' is less likely than 'failure'.

coefficient is not equal to zero (null hypothesis). When the statistics is statistical significant the null hypothesis is rejected and it is accepted the importance of the estimated coefficient admitting its value in significantly different from zero.

Finally, using a cut-off point of 0.5 (or 50% of the predicted probability) it also appears in the table the total percentage of correctly predicted cases – the value indicates how many observations are correctly classified (in this particular as female or male firm owners) using a given variable as an explanatory one (Hosmer et al., 2013; Liu, 2016). In close relation with the classification results, the ROC curve analysis also allows to evaluate the estimation power of the logistic regression model. In the graph that shows the ROC curve, and for this particular work, the sensitivity measures the probability that a firm with a female owner observation is classified as such, while specificity measures the probability that a firm with a male owner is also classified as it should. The power of prediction would be perfect if classifying observations has 100% sensitivity and 100% specificity. In graphical terms that will lead to a ROC curve which goes close to the top left corner of the plot (by opposition, a model with lower power of prediction will have an ROC curve which tends to the 45 degree diagonal line). Analytically, in the ROC curve the power of the model's predicted values is quantified by the area under the curve which varies from 0.5 (the power of prediction is no better than chance) to 1.0 (that indicates a perfect prediction power) (Hosmer et al., 2013).

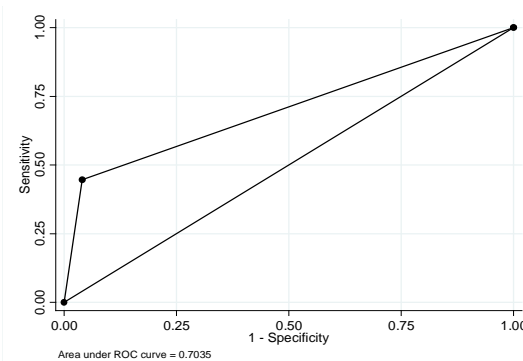
Table 1 shows the results of the simple model that helps to explain the probability of female entrepreneurship using as explanatory variable the gender of firm's top manager, in this particular case, the female top managers. The variable is equal to 1 if the firm has female top manager and 0, otherwise. The simple logistic equation estimated is the follow:

$$P = \text{logit}(P) = \ln \frac{P}{1-P} = \beta_0 + \beta_1 \text{Female top manager} + \varepsilon \quad (10)$$

With, $P = E(\text{Female entrepreneurship} = 1 | \text{Female top manager})$

Table 1. Estimation and post estimation results for female top managers.

Variable	Coefficient	Odd-ratio	P-value
Top Manager			
Female	2.97	19.40	0.001 ***
const	-1.73	0.18	0.001 ***
N = 360			
Pseudo R2 = 0.1962			
Wald chi2(1) = 61.63***			
Correctly classified observations = 83.89%			



Area under ROC curve = 0.7035

Notes: *** indicates that the coefficient is statistically significant at a significance level of 1%.

The result of odd ratio show, that in Armenia women have 19.4 times more probability to own firms with female top managers than male. Regarding to p-value the result is statistically significant for a 1% level of significance. The Wald test proves the significance of the estimated

coefficient. The Pseudo- R^2 is about 0.2 and the model correctly classifies near 84% of the gender ownership. The ROC curve is small 0.7, but still bigger than in the next models, which means that this variable does not have enough power to predict the value of observations correctly. The fact the model just include one variable is a clear limitation to the prediction power of the model. However, this variable is significant and important to analyse female entrepreneurship in Armenia. As noted in the current literature, the vast part of female entrepreneurs are involved, generally, in familiar areas which cater to other women such as beauty salons, entertainment, education, culture and consulting. Consequently, this might be a reason to have more female top managers in these spheres than males.

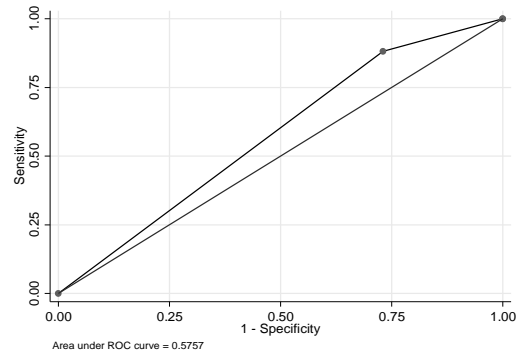
In the next table (Table 2), are presented the results of the simple model that tries to explain the probability of female entrepreneurship using as explanatory variable the location of firm owners in the capital city of Armenia – Yerevan. According to division of World Bank Yerevan is one of the regions where is located correspondent firms. The variable is equal to 1 if the respondent firm is located in Yerevan and 0, otherwise. The simple logistic equation estimated is the follow:

$$P = \text{logit}(P) = \ln \frac{P}{1-P} = \beta_0 + \beta_1 \text{Yerevan} + \varepsilon \quad (11)$$

With, $P = E(\text{Female entrepreneurship} = 1 | \text{Yerevan})$

Table 1. Estimation and post estimation results for region – Yerevan.

Variable	Coefficient	Odd-ratio	P-value
Region			
Yerevan	1.02	2.76	0.005 ***
const	-2.00	0.14	0.001 ***
N = 360			
Pseudo R2 = 0.0236			
Wald chi2(1) = 7.80***			
Correctly classified observations = 76.39%			



Notes: *** indicates that the coefficient is statistically significant at a significance level of 1%.

Odd-ratio results show, that women in Yerevan have 2.76 times more probability of becoming entrepreneurs then the women living in other regions of Armenia. The result is statistically significant for 1% level of significance (which means the result is trustful with 99% of confidence). The Wald test confirms the significance of the coefficient estimated. The Pseudo- R^2 is small, but as explained before was not expected a big value. The model correctly classifies near 76.5% of the gender ownership. The area under the ROC curve is, approximately, 0.58 which not being a very good results shows some capacity of the explanatory variable to predict the result. The fact the model just include one variable is a clear limitation to the prediction power of the model.

In economic terms, the table results show that location of firms is a factor that determines the probability of a women to become an entrepreneur in Armenia as was mentioned in the literature review. Indeed the entrepreneurial activity of the country is concentrated in Yerevan, therefore women entrepreneurs are more probable to meet there. In addition, as was referred also, the stereotypes are indicated as one of the main obstacles that women faced in Armenia. Indeed, Yerevan is the most develop city of the country and, therefore, the more cosmopolitan one and the one where the stereotypes are changing readily over time.

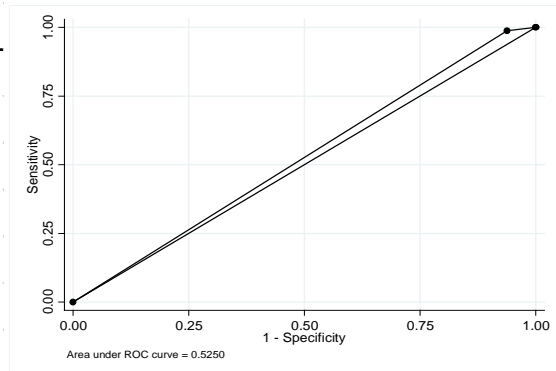
In Table 3 are presented the results of the simple model with the explanation of the probability of female entrepreneurship using as explanatory the variable that measures the large size firms. According to the number of employees of the surveyed firm is defined firm's size. The variable is equal to 1 if the surveyed firm has more than 100 workers and 0, otherwise. The simple logistic equation estimated is the follow:

$$P = \text{logit}(P) = \ln \frac{P}{1-P} = \beta_0 + \beta_1 \text{Large} + \varepsilon \quad (12)$$

With, $P = E(\text{Female entrepreneurship} = 1 | \text{Large})$

Table 3. Estimation and post estimation results for firm's size – large firm size.

Variable	Coefficient	Odd-ratio	P-value
Firm size			
Large	-1.71	0.18	0.099 *
const	-1.12	0.33	0.001 ***
N = 360			
Pseudo R2 = 0.0114			
Wald chi2(1) = 2.72*			
Correctly classified observations = 76.39%			



Notes: * indicates that the coefficient statistical significant at the 10% significance level.

Odd-ratio results show, that females in Armenia have an 82% lower probability of own a large size firm than other types of firm's size. Definitely the size of the company affects the female entrepreneurial activity in Armenia. The result is statistically significant for a 10% level of significance (i.e., the result is trustful with 90% of confidence). The Wald test confirms the significance of the estimated coefficient. The model correctly classifies near 76.5% of the observations. The area under the ROC curve is, approximately, 0.53 which not being a good results shows some capacity (even if not big) of the explanatory variable to predict the result. Again, the fact the model just include one variable is a clear limitation to the prediction power of the model. For this and the previous model results, the same will occur, probably in the next models too. As show the results, firm's size is a crucial factor for identifying the probability of a women to become an entrepreneur in Armenia. Evidently, and as was mentioned in literature review, women run business mainly with small and/or medium size and Armenian women are not an exception.

In Table 4 are presented the results of the simple model, which helps to explain the probability of female entrepreneurship depends on the consumption of foreign material in the firms' entrepreneurial activity. Continuous variable that measures, for 2012, the proportion of all of the material inputs or supplies purchased with a foreign origin. The simple logistic equation estimated is the follow:

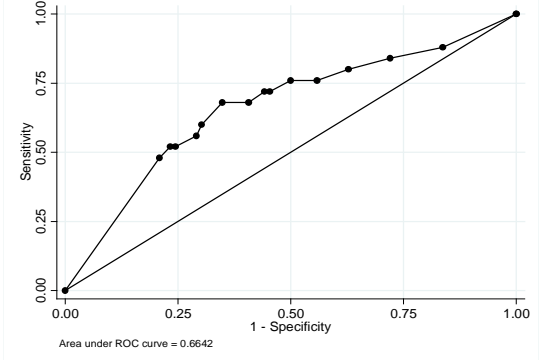
$$P = \text{logit}(P) = \ln \frac{P}{1-P} = \beta_0 + \beta_1 \text{Foreign material} + \varepsilon \quad (13)$$

With, $P = E(\text{Female entrepreneurship} = 1 | \text{Foreign material})$

Table 2. Estimation and post estimation results for the use of foreign inputs.

Variable	Coefficient	Odd-ratio	P-value
Foreign material	0.02	1.02	0.025 **
const	-2.19	0.11	0.001 ***

N=360
Pseudo R2 = 0.0549
Wald chi2(1) = 5.05**
Correctly classified observations = 77.48%



Area under ROC curve = 0.6642

Notes: ** indicates that the coefficient statistical significant at the 5% significance level.

The results of odd-ratio for foreign materials have a positive impact on female ownership. Regarding the result, increasing the proportion of foreign material in firms' material inputs will drive women to an entrepreneurial activity with a 1.02 times more probability. The result of model is statistically significant for a 5% level of significance. The Wald test confirms the significance of explanatory variable. The model classifies near 77.5% of the gender ownership. The ROC curve value near 0.66. It seems noticeable that in Armenia the use of foreign material characterises firms owned by women. As was suggested in the literature review, in many cases Armenian women are involved in shuttle trade – they travel to neighbour countries to purchase goods and raw materials in order to resell it in Armenia.

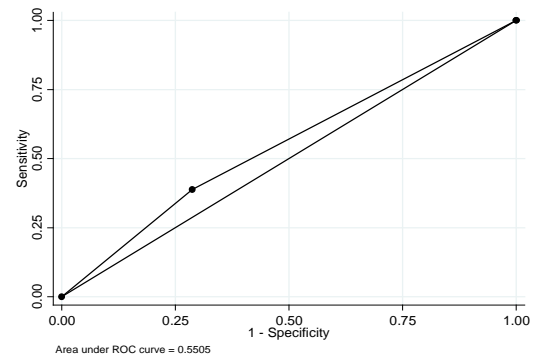
Table 5 shows the results for the model that explains the probability of female entrepreneurship using as explanatory variable the type of market where products and services were sold, in this particular case, the local market. The variable is equal to 1 if the main market of the firm is local and 0, otherwise. The simple logistic equation estimated is the follow:

$$P = \text{logit}(P) = \ln \frac{P}{1-P} = \beta_0 + \beta_1 \text{Local market} + \varepsilon \quad (14)$$

With, $P = E(\text{Female entrepreneurship} = 1 | \text{Local market})$

Table 3. Estimation and post estimation results for local market.

Variable	Coefficient	Odd-ratio	P-value
Market			
Local	0.45	1.57	0.081 *
const	-1.33	0.27	0.001 ***
N=360			
Pseudo R2 = 0.0076			
Wald chi2(1) = 3.05*			
Correctly classified observations = 76.39%			



Notes: * indicates that the coefficient statistical significant at the 10% significance level.

The results show that Armenian women have 1.57 times more probability to own firms which deliver their products and services locally then nationally or internationally. As it was mentioned for the previous model, Armenian women are involved in shuttle trade in order to after resell in local markets. The result is statistically significant for a 10% level of significance. The Pseudo- R^2 is again near zero, whilst the model correctly classifies near 76.5% of the gender ownership. The ROC curve is near 0.55 which as in previous models is not a powerful result. Although significant, is important to analyse the results of this model carefully. Having the statistical issues in consideration, in an economic perspective the table results show that the type of the market is a valuable factor to determine the probability of a women to become an entrepreneur in Armenia. As show the model's result local market has more significant influence on probability of women to become an entrepreneurs. The result is also supported by the current literature on Armenian female entrepreneurship: most of them create small businesses, therefore they offer their services and products mostly in local markets, even if they go abroad to buy the inputs used in production, and they do not have additional support (namely financial) to expand to a bigger market. Additionally, most of women become entrepreneurs to guarantee their own and their families' daily subsistence and to avoid unemployment – these can be guarantee by a local market activity.

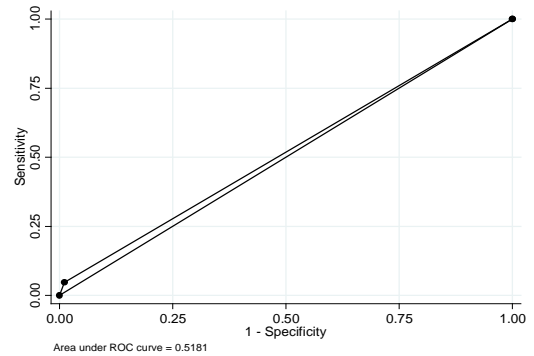
Table 6 illustrates the results of the model that explains how the access to land impact on the probability of women to become entrepreneurs. The variable counts the number of firms that indicated access to land as the main obstacle faced by the firm. The variable is equal to 1 if the access to land is the biggest obstacle faced by the respondent firm and 0, otherwise. The simple logistic equation estimated is the follow:

$$P = \text{logit}(P) = \ln \frac{P}{1 - P} = \beta_0 + \beta_1 \text{Access to land} + \varepsilon \quad (15)$$

With, $P = E(\text{Female entrepreneurship} = 1 | \text{Access to land})$

Table 6. Estimation and post estimation results for the access to land obstacle.

Variable	Coefficient	Odd-ratio	P-value
Enviroment obstacle			
Access to land	1.50	4.48	0.053 *
const	-1.21	0.30	0.001 ***
N=360			
Pseudo R2 = 0.0094			
Wald chi2(1) = 3.74*			
Correctly classified observations = 76.67%			



Notes: * indicates that the coefficient statistical significant at the 10% significance level.

The ease of access to land increases the probability of women to become entrepreneurs 4.48 times more comparing with other obstacles mentioned. The result of the model is statistically significant for a 10% level of significance and the model classifies 76.7% of the gender ownership. Note, however, that the result of the ROC curve is very small, 0.52, which makes the results weaker in terms of explanatory power. This obstacle is one of the less mentioned both for men and women which may indicate that this is not a major obstacle regardless of gender. Indeed other obstacles like the access to finance, the corruption, the tax rate and/or the political instability are mentioned as more common but not have a special impact on driving women to an entrepreneurial activity.

Table 7 presents the results of the simple model that helps to understand the probability of female entrepreneurship concerning tax administration. The variable counts the number of firms that indicated tax administration as the main one faced by the firm. The variable is equal to 1 if the tax administration is the biggest obstacle faced by the respondent firm and 0, otherwise. The simple logistic equation estimated is the follow:

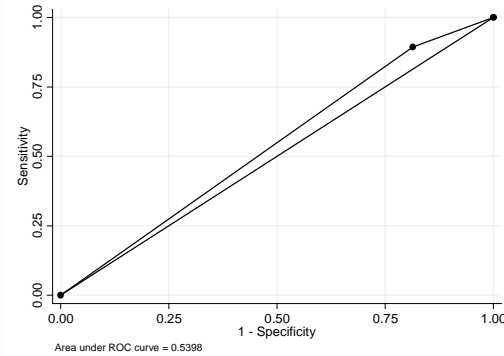
$$P = \text{logit}(P) = \ln \frac{P}{1-P} = \beta_0 + \beta_1 \text{Tax administration} + \varepsilon \quad (16)$$

With, $P = E(\text{Female entrepreneurship} = 1 | \text{Tax administration})$

According to the literature review, the tax administration system is consider a common but important obstacle faced by women in every country, including Armenia. The results of the model estimation, below, show (with 90% of confidence) that the tax administration system obstacles decrease in 48% the probability of a woman to be involved in an entrepreneurial activity. The model correctly predicts 76.5% of the gender ownership even if the area under the ROC curve is small (0.54).

Table 7. Estimation and post estimation results for the tax administration obstacle.

Variable	Coefficient	Odd-ratio	P-value
Enviroment obstacle			
Tax administaton	-0.65	0.52	0.09 *
const	-1.08	0.34	0.001 ***
N=360			
Pseudo R2 = 0.0082			
Wald chi2(1) = 2.87*			
Correctly classified observations = 76.39%			



Notes: * indicates that the coefficient statistical significant at the 10% significance level.

The results prove the importance of the tax administration burden in the rate of female entrepreneurship in Armenia. The impact of such a burden is negative for women entrepreneurial activity in Armenia. The results prove too the observations made in the literature.

5. Conclusions, limitations and future research lines

The purpose of this research was to explore the phenomena of female entrepreneurship in Armenian. In particular, the objective was to identify and measure the main factors that drive them to start and/or extend current business. As mentioned in the literature review the difficult access to finance, the environmental/societal issues, the tax policies, the corruption and other factors create an unfriendly environment in which female entrepreneurs face different difficulties, despite having clear motivations and goals. At the same time, as shows the study of Kuriakose (2013) the main motives to own a business in Armenia are: (1) the opportunity to earn more money and (2) the desire to be one's own boss. Not finding a suitable job and fearing to loss it also motivate Armenian entrepreneurs to run a new establishment.

Gender roles and stereotypes also have a significant impact on Armenian society. Despite the women participation in the country's entrepreneurial activity, the strong perceptions related to the private and family sphere are still prevalent for Armenian women. Gender stereotypes contribute to women's lower levels of representation in politics, in formal employment and, consequently, as business leaders (ADB, 2015). Another fact, that describes the women role and participation in the country's entrepreneurial activity, is the practice for men to register a business in the name of a female family member in order to hide their current business and also reduce the risks of debt payments (Wältring, 2013). A summary of the explored studies about female entrepreneurship in Armenia show that male and female entrepreneurs certainly face many common problems such as unfavourable tax rates, financing restrictions and corruption (ADB, 2015).

In spite the low participation of female in the entrepreneurial activity many international organizations, different donors and associations cultivate different promotion policies and projects to support and promote it in Armenia. However the reality shows the vulnerability of their work and support. The institutional infrastructures and BDS services of this organisations

are still very weak even if over time the traditional roles and stereotypes are changing women start to be more involved in entrepreneurship and business development.

The empirical analysis, carried out in this research work, tried to find empirical evidence that supports (or not) the literature. The logistic regression was intended to identify which variables are really drivers of female entrepreneurship in Armenia and how they impact on the probability of women to run a business. From the variables the following ones were found statistically significant. The female top managers, the location of firms in the capital city, the foreign type of material inputs, the local market, and the access to land are variables with a positive statistical impact. The large size of the firm and the tax administration work as obstacles for women if they intend to start or develop an entrepreneurial activity. As prove the findings of logistic regression, women entrepreneurs in Armenia have a bigger probability to run their businesses with female top managers and mainly in Yerevan. According to firm's size, was proved that this factor is crucial on influencing the probability of women to become entrepreneurs in Armenia. When firms are created big they more probably are not owned by woman. Indeed was observed that women entrepreneurs mainly run small and/or medium sized firms. Other pivotal factor that influence on the decision of Armenian women to engage in an entrepreneurial activity is local market. Environmental obstacles such as the access to land has a positive influence on the probability of women to involve in entrepreneurship, while the tax administration is found as the vital burden for Armenian women.

Acknowledgments

The author(s) would like to thanks the World Bank Enterprises Surveys for making available the microeconomic data necessary to do the present study. The author(s) is (are) the only responsible for the results and opinions presented in the work.

References

- ADB (2015). *Armenia country gender assessment* (Asian Development Bank Report No. RPT 15746-2). Retrieved from <http://www.adb.org/documents/armenia-country-gender-assessment>
- Ahl, H. (2006). Why research on women entrepreneurs needs new directions. *Entrepreneurship Theory and Practice*, 30(5), 595–621. <http://doi.org/10.1111/j.1540-6520.2006.00138.x>
- Akehurst, G., Simarro, E., & Mas-Tur, A. (2012). Women entrepreneurship in small service firms: motivations, barriers and performance. *The Service Industries Journal*, 32(15), 2489–2505. <http://doi.org/10.1080/02642069.2012.677834>
- Alanakyan, N. (2014). *Assessment of needs for business services among women entrepreneurs of Armenia*. Armenia: Asian Development Bank. Retrieved from <http://www.adb.org/projects/documents/assessment-needs-business-services-among-women-entrepreneurs-armenia-2014>
- Ali, Y. S., & Mahamud, H. A. (2013). Motivational factors and performance of women entrepreneurs in Somalia. *Journal of Education and Practice*, 4(17), 47–53. Retrieved from <http://www.iiste.org/Journals/index.php/JEP/article/view/7387>
- Anwar, M. U., & Rashid, D. A. G. (2011). Women entrepreneurship- A literature review and proposed conceptual framework. In *2nd International Conference on Business Management*. Retrieved from <http://www.umt.edu.pk/icobm2012/pdf/2C-78P.pdf>

- Atasoy, H. (2015). Latent entrepreneurship in transition economies. *IZA World of Labour*. Retrieved from http://econpapers.repec.org/article/izaizawol/journal_3ay_3a2015_3an_3a155.htm
- Bennett, R., & Dann, S. (2000). The changing experience of Australian female entrepreneurs. *Gender, Work & Organization*, 7(2), 75–83. <http://doi.org/10.1111/1468-0432.00095>
- Buttner, E. H., & Moore, D. P. (1997). Women's organizational exodus to entrepreneurship: Self-reported motivations and correlates with success. *Journal of Small Business Management*, 35.1, 34–46. Retrieved from <https://www.questia.com/library/journal/1G1-19360492/women-s-organizational-exodus-to-entrepreneurship>
- Carlsson, B., Braunerhjelm, P., McKelvey, M., Olofsson, C., Persson, L., & Ylinenpää, H. (2013). The evolving domain of entrepreneurship research. *Small Business Economics*, 41(4), 913–930. <http://doi.org/10.1007/s11187-013-9503-y>
- Chelliah, J., & Lee, H. (2011). Inter-generational changes in entrepreneurial values of Chinese Australians. *Journal of Global Business Management*, 7(2), 1–11. Retrieved from <https://opus.lib.uts.edu.au/handle/10453/17671>
- De Bruin, A., Brush, C. G., & Welter, F. (2006). Introduction to the special issue: Towards building cumulative knowledge on women's entrepreneurship. *Entrepreneurship Theory and Practice*, 30(5), 585–593. <http://doi.org/10.1111/j.1540-6520.2006.00137.x>
- Debroux, P. (2010). *Female entrepreneurship in East and South-East Asia: Opportunities and challenges*. Oxford, Cambridge: Woodhead Publishing Limited.
- Ferk, M., Quien, M., & Posavec, Z. (2013). Female vs. male entrepreneurship - is there a difference? *Studies of Organisational Management & Sustainability*, 1(1), 67–77. Retrieved from <http://soms.ismai.pt/index.php/SOMS/article/view/4>
- Hosmer, D., Lemeshow, S., & Sturdivant, R. (2013). *Applied logistic regression* (3–rd ed.). John Wiley & Sons, Inc.
- Idrus, S., Pauzi, N. M., & Munir, Z. A. (2014). The effectiveness of training model for women entrepreneurship program. *Procedia - Social and Behavioral Sciences*, 129, 82–89. <http://doi.org/10.1016/j.sbspro.2014.03.651>
- Jesurajan, A., & Gnanadhas, E. (2011). A study on the factors motivating women to become entrepreneurs in Tirunelveli district. *Asian Journal of Business and Economics*, 1(11), 1–14. Retrieved from <http://www.onlineresearchjournals.com/ajbe/art/52.pdf>
- Joseph, H., Nicholas, N., & Cox, J. (2000). *A publication to promote communication among Stata users* Editor Associate Editors. Stata technical bulletin. Retrieved from <http://www.stata.com/products/stb/journals/stb54.pdf>
- Kepler, E., & Shane, S. A. (2007). *Are male and female entrepreneurs really that different?* Washington, D.C.: US Small Business Administration, Office of Advocacy.
- Kuriakose, S. (2013). *Fostering entrepreneurship in Armenia*. World Bank. Retrieved from <http://documents.worldbank.org/curated/en/2013/08/18165122/fostering-entrepreneurship-armenia>
- Lacob, S., & Nedelea, A. (2014). Entrepreneurship, support of the economic changes in China. *The USV Annals of Economics and Public Administration*, 14(2(20)), 14–28. Retrieved from <http://www.seap.usv.ro/annals/ojs/index.php/annals/article/view/715/655>

Lee, M.-S., & Rogoff, E. G. (1997). A dual path model of education effects on entrepreneurship: An empirical analysis. *Journal of Business and Entrepreneurship*, 9(1), 99–115. Retrieved from <https://www.questia.com/library/journal/1P3-1396286671>

Liu, X. (2016). *Applied ordinal logistic regression using Stata*. Sage Publications.

Long, J. S., & Freese, J. (2014). *Regression models for categorical dependent variables using Stata* (3-rd ed.). Stata Press.

Marlow, S., Carter, S., & Shaw, E. (2008). Constructing female entrepreneurship policy in the UK: Is the US a relevant benchmark? *Environment and Planning C: Government and Policy*, 26(2), 335–351. <http://doi.org/10.1068/c0732r>

McAdam, M., & Roper, S. (2013). *Female entrepreneurship*. London, UK: Routledge.

McGowan, P., Redeker, C. L., Cooper, S. Y., & Greenan, K. (2012). Female entrepreneurship and the management of business and domestic roles: Motivations, expectations and realities. *Entrepreneurship & Regional Development*, 24(1–2), 53–72. <http://doi.org/10.1080/08985626.2012.637351>

Minniti, M. (2005). Entrepreneurship and network externalities. *Journal of Economic Behavior & Organization*, 57(1), 1–27. <http://doi.org/10.1016/j.jebo.2004.10.002>

Mordi, C., Simpson, R., Singh, S., & Okafor, C. (2010). The role of cultural values in understanding the challenges faced by female entrepreneurs in Nigeria. *Gender in Management: An International Journal*, 25(1), 5–21. <http://doi.org/10.1108/17542411011019904>

Nelson, O. N., & Cengiz, K. (2005). Malaysian women entrepreneurs: understanding the ICT usage behaviours and drivers. *Journal of Enterprise Information Management*, 18(6), 721–739. <http://doi.org/10.1108/17410390510628418>

OECD (1998). *Fostering Entrepreneurship*. Paris: Organisation for Economic Co-operation and Development.

Peng, C.-Y. J., Lee, K. L., & Ingersoll, G. M. (2002). An introduction to logistic regression analysis and reporting. *The Journal of Educational Research*, 96(1), 3–14. <http://doi.org/10.1080/00220670209598786>

Schwartz, G. J., Haycock, G. B., Edelmann, C. M., & Spitzer, A. (1976). A simple estimate of glomerular filtration rate in children derived from body length and plasma creatinine. *Pediatrics*, 58(2), 259–263. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/951142>

Scott, J. W. (1986). Gender: A useful category of historical analysis. *The American Historical Review*, 91(5), 1053–1075. <http://doi.org/10.2307/1864376>

Sharma, M. Y. (2013). Women entrepreneurship in India. *IOSR Journal of Business and Management*, 15(3), 9–14. Retrieved from <http://iosrjournals.org/iosr-jbm/papers/Vol15-issue3/C01530914.pdf>

US Census Bureau (2002). *Women-owned firms* (U.S. Department of Commerce, Economic and Statistics Administration Survey of Business Owners). Retrieved from <https://www.census.gov/prod/ec02/sb0200cswmn.pdf>

Vossenbergh, S. (2013). Women entrepreneurship promotion in developing countries: What explains the gender gap in entrepreneurship and how to close it? (Maastricht School of Management Working Paper No. 2013/08). Retrieved from <ftp://ftp.repec.org/opt/ReDIF/RePEc/msm/wpaper/MSM-WP2013-08.pdf>

Walker, E. A., & Webster, B. J. (2007). Gender, age and self-employment: some things change, some stay the same. *Women in Management Review*, 22(2), 122–135. <http://doi.org/10.1108/09649420710732088>

Wältring, F. (2013). *Women entrepreneurship strategy in Armenia* (Asian Development Bank Women's entrepreneurship support sector development program No. RRP ARM 45230) Retrieved from <http://smednc.am/files/pdfs/attachments/original/b7d39e3430.pdf>

Watkins, D. S., & Watkins, J. (1984). The female entrepreneur: Background and determinants of business choice-some British data. *Frontiers of Entrepreneurship Research*, 2, 271–288. <http://doi.org/10.1177/026624268400200403>

Wilson, F., Kickul, J., & Marlino, D. (2007). Gender, entrepreneurial self-efficacy, and entrepreneurial career intentions: Implications for entrepreneurship education. *Entrepreneurship: Theory & Practice*, 31(3), 387–406. <http://doi.org/10.1111/j.1540-6520.2007.00179.x>

Zwan, P., Atasoy, H., Tiongson, E., & Sanchez-Paramo, C. (2013). *Latent entrepreneurship in the Europe and Central Asia (ECA) region* (Unpublished Working Paper). Retrieved from http://www.uni-klu.ac.at/sozio/downloads/Peter_van_der_Zwan.pdf