Research Article

Determinants of female entrepreneurship in e-commerce in a developing country

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Abstract

Entrepreneurial intention is important because it highlights the value and power of the person. In an underdeveloped country like Peru, entrepreneurship has a high level, but the opportunity to start a business is affected by social, cultural and governmental factors. Therefore, the present research aimed to identify the determinants that influence female entrepreneurship with respect to electronic commerce. The study found that for e-commerce entrepreneurs, management skills, e-commerce attitude and motherhood are significant. The results based on the regression analysis suggest that the model fits well as it predicts the value of business intent at 95% with a significance value of 5%. Based on the findings of the study, an evaluation model of the entrepreneurial intention of electronic commerce is developed that includes all the significant variables. This study will help other academics guide their efforts to strengthen the theory about the entrepreneurial intention of women.

Index Terms: Female entrepreneurship, e-commerce, entrepreneurial intention in e-commerce

1. Introduction

Digital technology and its application to electronic commerce has a significant impact on business globally (Mazzarol, 2015). Providing a wide range of opportunities for the development of women in various types of business-related tasks (Mivehchi, 2019).

In Peru until September 2020 there were 2 million 701 thousand 66 companies, of which 50% are led by women and the rest by men, according to data from the National Institute of Statistics and Informatics (INEI, 2020).

Suárez & Gálvez (2017) point out that the reasons that drive female entrepreneurship are compulsory due to factors such as motherhood, family and dependency. For Hodges et al. (2015) the challenge for female entrepreneurship is related to gender and to national economic, social and political regulations. Ortiz (2017), indicates the importance of social support and comprehensive training for the creation of a culture that promotes the role of female entrepreneurs. For Jelonek (2015), electronic commerce is an innovative business practice that allows detecting and taking advantage of business opportunities.

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E-commerce grew by 240% in May 2020 and online sales are expected to continue growing between 50% and 80% in the following months (Ipsos, 2020). We are in the rise of electronic commerce, and this provides an opportunity for women to find a job and at the same time a way to develop personally (Salman & Jamil, 2017).

The intention has been considered as the basic antecedent of the behavior of individuals, therefore, it has been included as a conditioner of behavior in the main models of entrepreneurship intention, such as Ajzen's Theory, Shapero and Sokol's theory, the model Krueger and Brazeal and the 3M and 5M model. Mussons & Tarrats (2018), mention that the model of the entrepreneur of Shapero and Sokol, considers that the individual's option to start a business depends on three elements: the perception of desirability, the perception of feasibility and the propensity to act. On the other hand, Regalado Pezúa et al. (2017) argues that the theory of planned behavior proposed by Ajzen seeks to establish a certain behavior regarding internal and external factors of the individual, which enable action and that an individual's behavior is understood based on their intention. Any behavior that is the act of starting a business in entrepreneurship needs some degree of planning and is predicted through the intention to adopt that behavior (Salman & Jamil, 2017). The theory further says that there are three important variables that lead to intention, Alonso & Galve (2011), Osorio & Roldán (2015) and Hollett et al. (2020) indicate that, first is attitude, second, perception and, lastly, perceived control. Diez (2016) indicates that the entrepreneurial intention is given by the presence of two attitudes that are desirability and feasibility, conceived of the behavior that is sustained in the theory of Ajzen and the theory of Shapero and Sokol. Finally, Mussons & Tarrats (2018) mention that Krueger and Brazeal complement the Shapero and Sokol model, integrating aspects of Ajzen, and call it the entrepreneurial potential model, which includes all the definitions of perception of feasibility and desirability, as well as the propensity to act. We have to consider that the entrepreneurial potential model arises from the evolution of the aforementioned theories, being at present the most widely used entrepreneurship model. The variables that include factors that will be the object of study are described below.

Enterprising woman

The "3M" model is a theory that originates from the generalized view of entrepreneurship management, where the "Ms" represent money, market and management (Welsh et al., 2018). It is important that the entrepreneur has access to capital, that is, money. He, likewise, must have access to the market and management or rather human and organizational capital (Salman & Jamil, 2017). Brush et al. (2009) propose the "5M" model, noting that, to better understand female entrepreneurship, it is necessary to include two additional "Ms", that is, motherhood and meso / macroenvironment together with the original three (Hodges et al., 2015). Motherhood represents the responsibility of managing the home and family (Rosenbaum, 2017). The macroenvironment includes aspects such as social, economic and cultural norms for women entrepreneurs. The meso environment incorporates work support services, initiatives, organized social life, rules and guidelines (Tahir & Baradie, 2019). All the aforementioned aspects are important for the entrepreneurial woman to have an organized social and work life (Salman & Jamil, 2017).

Ecommerce entrepreneurship

Electronic commerce includes the distribution, sale, purchase, marketing, and supply of product or service information through the Internet (Merino et al., 2018). One of the most significant aspects of electronic commerce for entrepreneurs is cost reduction since it minimizes office and storage expenses (Puto & Kościelniak, 2015). However, its development implies more than that since it represents an opportunity for companies to grow and expand (Sánchez & Milla, 2018). Entrepreneurs have found great opportunities in the development of technologies, achieving data exchanges at high levels, thus creating new forms of commerce (Alvarado & Vergara, 2018). Entrepreneurs must take full advantage of the advantages of applying technological tools in the commercialization of their products or services through virtual platforms. Pesántez, Romero & González (2020) point out that these advantages allow achieving a high level of connectivity with the foreign market, mobilize negotiation processes and increase sales. In addition, they help to carry out any transaction without leaving home, allowing us to compete on a par with large companies and facilitating access to clients by responding quickly to their needs.

According to the variables, the following Model was proposed:

$$Y = \beta_0 + \beta_1.x_1 + \beta_2.x_2 + \beta_3.x_3 + \beta_4.x_4 + \beta_5.x_5 + \beta_6.x_6 + e$$

Where:

Y: Entrepreneurial Intention in E-Commerce.

x1: Attitude towards E-commerce

x2: Self-efficacy

x3: Management capacity

x4: Market and Capital Access (2 Market and Money)

x4: Macro and Micro Environment

x5: Maternity

β : ?

2. Method

For the present investigation a study with a quantitative approach was carried out. For this, a questionnaire was developed taking as a reference the work of Salman & Jamil (2017), and questions regarding the attitude to electronic commerce were included. Forming a total of 24 questions, which were presented on a Likert scale. The scale reported on the degree of agreement and disagreement for different statements. To test the reliability of the questionnaire, a pilot test was carried out, the previous results of which were obtained an acceptable Cronbach's alpha of 0.783.

The study population was made up of young female university graduates from any professional career belonging to the eighth, ninth or tenth cycle and also recent graduates. 281 young people from different universities were surveyed. The information was collected using a Google form that was shared by WhatsApp, inviting you to participate in the study on a voluntary basis.

The data processing was carried out by means of a regression analysis since the value of a dependent variable is predicted using several independent variables and the diagram in Figure 1 shows that the variables were linearly related, that is to say that the entrepreneurial intention depends on the other independent variables.

The value of the residual that was obtained in the regression analysis also checks the normality of the residuals by plotting the graph. Finally, the variables are checked for multicollinearity, this is done by measuring the value of the variance inflation factor (VIF) in the coefficients table.

3. Results

The various regression assumptions were also tested before applying the regression tests. The scatterplot below shows that almost all the variables are linearly related or no curvilinear relationship to it and therefore the first assumption of the regression analysis was met. In figure 1 the normality of the residual value obtained in the regression analysis is verified by tracing a graph, the graph shows an approximately normal distribution, therefore, it is fulfilled with the other assumption.
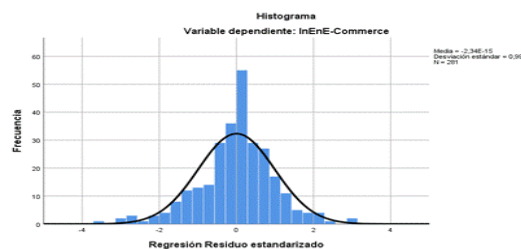

Figure 1. Normality of the residuals

Table1. Collinearity statistic

	Tolerancia	VIF
Constant		
Macro and Micro Environment	0.808	1.237
Attitude towards e-commerce	0.964	1.038

Management	0.809	1.237
Maternity	0.828	1.207

Table 1. shows the analysis of the multicollinearity of the variables, this is done by measuring the value of the variance inflation factor (VIF) in the coefficient tables and it is verified that the value of all the variables was less than 10, showing that there is no multicollinearity. This shows the stability of the model for the regression analysis.

In this case, all the regression analysis assumptions were met, so we proceeded to search for the model with regression tests and analysis using SPSS.

Table 2. Profile of the respondents

Employment situation	Frequency	%	Accumulated percentage
Employee	78	27.8%	27.8%
Independent	58	20.6%	48.4%
Practicing	75	26.7%	75.1%
Unemployed	70	24.9%	100.0%
Total	281	100.0%	
Marital status			
Single	252	89.7%	89.7%
Married	11	3.9%	93.6%
Cohabiting	18	6.4%	100.0%
Total	281	100.0%	

Table 3. Model Summary

Model	R	R square	R square fitted	Estándar error of the estimate	Durbin-Watson
10	,970j	0.942	0.941	2.228	1.917

The first value in table 3 is the R value. The level of significance established by the researchers was 95%. R was 0.970 as highlighted by the research teeth, the closer this value is to 1, the better the model will be to evaluate the variable to be predicted. The square of R is also known as the coefficient of determination. Since the value of R squared is also very close to 1, it shows that the independent variables in the model, the ANNOVA helps to prove the existence of a regression that explains the value of the dependent variable very efficiently. The adjusted R value, which is 0.941, shows that the model would also explain the dependent variable if it were different. Its value is usually less than that of R-squared and the same is the present case. The standard error of estimation shows the degree of variability in the value of the dependent variable Y.

Table 4. Annova

Modelo		Sum of squares	gl	Mean square	F	Sig.
10	Regression	22194.110	4	5548.527	1117.814	,000k
	Residue	1369.990	276	4.964		
	Total	23564.100	280			

Table 4 provided the value of F as well as the level of significance. The F value is large and the significance of 0.0001 also shows that the results are very significant. The F statistic shows the relationship between the mean square of the model and the mean square of the error and shows the value of skewness.

Table 5. Coefficients

Model		Non-standardized Coefficients		Standardized Coefficients		
		B	Desv. Error	Beta	t	Sig.
10	Constant	16.172	1.328		12.174	0.000
	Macro and Micro Environment	1.033	0.054	0.310	19.187	0.000

Attitude towards e-commerce	1.097	0.046	0.352	23.823	0.000
Management	2.282	0.079	0.464	28.719	0.000
Maternity	1.166	0.054	0.343	21.479	0.000

Table 5 shows the values of the beta coefficients for all the independent variables. It is observed that not all the variables proposed in the initial model of the study are found since the model calculated by the SPSS through the regression test with the advance method (probability criterion of F to enter <= 0.050), only produced these variables. To calculate the value of variable Y, it is necessary to multiply the values of each independent variable with the corresponding beta coefficient. The T-test values are also given for each of the coefficients. Significance shows that all variables are significant. The significance value of this study is 5%. With which it is shown that all the selected variables are significant.

Putting the values in the equation of the proposed regression model, we have:

$Y = \beta_0 + \beta_1.x_1 + \beta_2.x_2 + \beta_3.x_3 + \beta_4.x_4 + \beta_5.x_5 + \beta_6.x_6 + e$

$Y = 16.172 + 0.310$ (Macro-Meso) $+ 0.352$ (Attitude towards e-commerce) $+ 0.464$ (Management) $+ 0.343$ (Maternity)

The results based on beta values show that management skills, e-commerce attitude and motherhood are the most important factors in women's entrepreneurial intention in e-commerce.

4. Discussion and Conclusions

The results obtained mention that potential entrepreneurs intend to implement electronic commerce in the long term. Three out of five variables raised are supported, management capacity, attitude to E-commerce and motherhood had a significant impact. Of these variables, Picazo, Ramírez & Luna (2013) suggest that the attitude towards electronic commerce has a positive and significant influence, as well as behavioral control, on the intention to undertake in electronic commerce. In the same order, Salman & Jamil (2017) emphasize that desirability (motherhood, psychological, aptitude, achievement motivation and locus control) and propensity (control, culture and social) are the most important factors in the business intention of electronic commerce. While Mussons & Tarrats (2018) conclude that the perception of viability, related to self-efficacy, innovation and creativity affect a future of entrepreneurial intention. Finally, the articles associated with entrepreneurial intention in electronic commerce emphasize the high relationship of the variables with intention. Unlike other studies referring to the entrepreneurial intention of women, this research identifies an indication regarding the variables that could predict entrepreneurial intention in electronic commerce in a Peruvian context. Which is necessary for public management to promote the development of policies that promote it.

The conclusion of the present research study indicates that there are few variables that effectively influence future entrepreneurial behavior in electronic commerce, with variables such as management capacity, attitude to E-commerce and motherhood having a higher level. Finally, it is important to emphasize that trade is of great interest to potential entrepreneurs. The arrival of the Covid-19 pandemic has increased unemployment, however, an opportunity has been opened to enter online businesses with greater force, since a large part of the population is willing to buy through this means. Thus, nascent entrepreneurs will continue to promote business innovation through virtual platforms.

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