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Gender as a Factor of Entrepreneurship in University Students

Osbaldo Washington Turpo Gebera[1], Diego Jesús Mamani Quispe[2],
Juliana Mery Bautista Lopez[3], Juan Santiago Zamata Machaca[4]

[1,2,3,4] Universidad Nacional de San Agustin de Arequipa
Email: [1]oturpo@unsa.edu.pe, [2]dmamaniquis@unsa.edu.pe, [3]jbautistal@unsa.edu.pe, [4]jzamatam@unsa.edu.pe

Abstract

Understanding which elements explain the intention to become an entrepreneur helps to propose extracurricular activities by the university and to encourage the creation of companies. This study seeks to analyze the influence of gender on the factors that explain the intention of entrepreneurship in undergraduate students of a public university. The research responds to the quantitative approach, of explanatory level, for data collection a questionnaire "Intention to undertake" based on the Likert scale was applied and through the Google forms 619 students were surveyed. A multiple regression model was used for the analysis, using RStudio and SPSS 22.0. The results show that 53% of students identify an entrepreneurship in their family environment; furthermore, upon graduation, 41% aspire to a job in a private company, and 35% to develop an entrepreneurship. According to the multiple regression model for entrepreneurial intention, in both sexes, personal factors (desire for independence) stand out; in women, the need for fulfillment prevails, while in men, the capacity for communication and persuasion. And in the contextual factors, the following were identified as significant: the capacity for innovation and political and economic factors.

Keywords— Gender, entrepreneurship, university, personal factors, contextual factors

I. INTRODUCTION

In this pandemic scenario where we are in a global economic recession and the world economy is only just expanding by 4%, we are in the midst of a global economic recession. [1], reaching unemployment with a global deficit that increased by 144 million jobs in 2020 and job opportunities declined dramatically in several continents, with Latin America, Europe and Central Asia being most affected. [2]

Based on projections [2] this upturn in employment will only begin in 2023, showing that the PEA will be affected in the long term, and to counteract this unemployment situation, one of the alternatives for the population is to become entrepreneurs and generate their own income.

The level of entrepreneurial activity is varied, with the lowest levels of entrepreneurship in Europe and North America and the highest levels of entrepreneurship in Latin America and the Caribbean. [3]

Analyzing the lack of employment in Latin America, self-employment is more prevalent and this alternative of entrepreneurship is the basis for development and should be taken advantage of by the government to have an innovative and successful long-term entrepreneurship. [4]

And analyzing in the context of Peru on entrepreneurship until the year 2019, the reasons for entrepreneurship were identified as seeing a market opportunity (53%) and necessity (23%), showing that their analysis will contribute to government policies. [5]

The purpose of this study is to provide information on the characteristics to promote entrepreneurship for public universities and for the policies being implemented by the Ministry of Production in Peru on the main obstacles to carry out this activity and reduce the probability of failure in their attempt. [6] And to check what

personal and contextual factors explain in the intention of entrepreneurship in undergraduate university students at the National University of San Agustin in gender.

One of the important elements for a person to decide whether to become an employee or start a business is the expected profit he/she expects to receive from the development of the entrepreneurial initiative. [6]

In the report [5] The innovation rate in Peru is in first place, so it is important to know what personal and contextual factors have a significant influence.

The importance of gender in entrepreneurship has been further explored in the study. [7] which compares the nations of the USA, China and Belgium indicating that the most significant barrier to entrepreneurship is the lack of support in the female group compared to the male group..

Among the main backgrounds of entrepreneurship, university and according to gender, the research found that [8] about entrepreneurial intention according to gender using Liñan's model, the variables that influence: perceived desirability, perceived viability and having an entrepreneurial parent. Then in the article [9] which evaluates the gender difference in the entrepreneurial intention of students in Chile, finding that there is no difference and that there is no gender difference according to the factors attitudes, subjective norms, behavioral control.

With respect to both personal and contextual factors with entrepreneurial intent in the paper [10] using the university student entrepreneurship survey evaluates both factors as moderating effects, finding that males are more likely to be entrepreneurial than females.

Analyzing the antecedents of the personal factor and its relationship to entrepreneurial intention in the study[11] this one is very important and within the personal aspect is: attitude and behavioral control. Then in the studio [12] which evaluates the personal factors, attributes, family, demographic variables and motivations that contribute to a student starting a business, it was found that education is the most relevant factor and motivation in the personal characteristic.

And in the review of the relationship of contextual factors with the intention to undertake, among them is the support as indicated in the study [13] that assesses engineering students at MIT's School of Engineering is directly related. Later in the investigation [14] is educational support as a contextual factor as a predictor and that the role of the university is key.

The article [15] which conducted a systematic review of 177 articles in the SCOPUS database from 1994 to 2017 summarizes on: personal level variables, entrepreneurship education (EE) and contextual factors and institutional variables.

Among the determinants of entrepreneurial intention in university students is the study of the following factors [16] which found that it significantly affects the gender, family business status, social practice, entrepreneurial model, etc. of the university graduates it evaluates in marketing graduates.

Entrepreneurial intent

Entrepreneurship as indicated implies connecting with the economic or social reality and contributing with product improvements, utilizing resources and adding value [17]

The study was based on the following model [18], [19] which is detailed in three circumstances: degree of personal evaluation, social relationships, behavioral control.

In addition, the variable of entrepreneurial intention is characterized as a multidimensional and multicausal phenomenon that is influenced by personal and contextual factors. [20] [21]

Personal factors and entrepreneurial intent

Among the pioneers of what personal characteristics are the driving force behind entrepreneurship [22] indicating by tes motivations: fulfillment, power and affiliation.

The following elements of the personal factors that explain the intention to undertake according to gender were proposed:

H1: Resilience(RS) is an explanatory factor in the entrepreneurial intention of university students.

H2: The need for fulfillment(NR) is a factor that explains the entrepreneurial intention of university students..
H3: Visioning ability(CV) is an explanatory factor in the entrepreneurial intention of university students..
H4: Leadership skills(CL) are an explanatory factor in the entrepreneurial intentions of university students..
H5: The ability to communicate and persuade(CCP) is a factor that explains the entrepreneurial intentions of university students..
H6: The desire for independence(DI) is an explanatory factor in the entrepreneurial intentions of university students.

Contextual factors and entrepreneurial intent

The author [23] indicates that entrepreneurship is driven by the environment and is influenced by the impulses, support and conditions of the region.
And the contextual factors that explain the intention to undertake according to gender:

H7: Political and economic factors(PE) are an explanatory factor in the entrepreneurial intentions of university students..
H8: The capacity for innovation(CI) is a factor that explains the entrepreneurial intention of university students.
H9: The educational environment(AE) is a factor that explains the entrepreneurial intention of university students.

II. STATEMENT OF CONTRIBUTION/METHODS

The research corresponds to the quantitative approach and to the descriptive-explanatory level and its design is non-experimental and cross-sectional. [24]. The survey technique was used for its execution by means of a Likert scale questionnaire instrument. The sample consisted of undergraduate students who are studying from 3rd to 5th year in the academic areas of social sciences and engineering in the period of 2021. The criteria for choosing the years of study are those who have taken the general courses.

The sample size was 619 undergraduate students from the public university of Universidad Nacional de San Agustín, previously the evidence of validity for the scales for both the dependent variable and the independent variables was evaluated by confirmatory factor analysis. (AFC) for each of the scales in order to evaluate the evidence of validity based on their internal structure. The process began with the calculation of the polychoric correlation matrix for each scale, given the ordinal nature of the items (Likert type). The estimator used was the WLSMV (weighted least squares with adjusted mean and variance) given the robustness of this estimator for the treatment of ordinal scales. [25]
The overall evaluation of the fit of the AFC for each scale was obtained with the comparative fit index (CFI), the rate of Tucker-Lewis (TLI), residual root mean square (SRMR) and the root mean square error of approximation (RMSEA). Values are interpreted ≥ 0,90 in CFI y TLI as favorable evidence of model fit [26], as well as ≤0,08 para RMSEA y SRMR [27]
For reliability, the internal consistency methodology was considered through the composite reliability or omega coefficien [28]
In data processing, first with the use of the IBM SPSS Statistics in its version 26 The descriptive statistics of the entrepreneurial intention and its factors were determined and the factors that explain it were tested by means of a multiple linear regression equation considering the entrepreneurial intention as the dependent variable and the personal and contextual factors as independent variables.
The software used for the procedures was the lavaan en R Studio [29] . For the descriptive analyses and initial database management, the software was used IBM SPSS Statistics in its version 26.
The link to the questionnaire form executed was: https://forms.gle/NYCfVHp6Am6vfvQq5
The test used has been adapted [6] where the dependent variable and the personal and contextual factors that were used are detailed.:

Tabla 1: Variables and dimensions

Variable	Dimensión

VI: Personal factor	Resilience Need for Realization Vision Capability (CV) Leadership capacity (CL) Communication and Persuasion Skills (CCP) Desire for independence (DI)
VI2: Contextual factors	Políticos y económicos(PE) Capacidad de innovación(CI) Ambiente Educacional(AE)
VD: Entrepreneurial intent	

The questionnaire was carried out by means of a Likert scale test with five alternatives:

Table 2: Likert scale interpretation

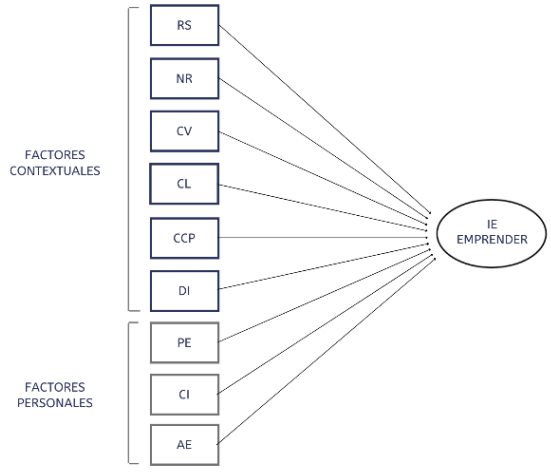
1	Strongly disagree
2	Disagree
3	Neither agree nor disagree
4	Agreed
5	Totally agree

III.PROPOSAL OF THE MODEL

For the present work, entrepreneurial intention is explained by the dimensions of the construct of personal and contextual factors.

Figura 1

Explanatory model of entrepreneurial intention



IV. RESULTS, DISCUSSIONS AND CONCLUSIONS

Modelo de medida

The results in Table 3 indicate a satisfactory fit for the AFC and through the Omega coefficient, internal consistency was found for each scale for the personal and contextual factors as independent variables and the dependent variable of entrepreneurial intention.

Table 3: Resultados AFC y confiabilidad para las escalas utilizadas

Escalas del estudio	N	$\chi^2_{(gl)}$	CFI	RMSEA	SRMR	TLI
Intención de emprender	6	$\chi^2(9)$ 55,15***	0,99	0,03	0,02	0,99
Factores políticos y económicos	6	$\chi^2(9)$ 93,02***	0,95	0,06	0,07	0,96
Capacidad de Innovación	5	$\chi^2(5)$ 14,82***	0,99	0,06	0,01	0,99
Resiliencia	4	$\chi^2(2)$ 21,54***	0,99	0,07	0,03	0,98
Necesidad de Realización	4	$\chi^2(2)$ 5,33***	0,95	0,02	0,01	0,95
Capacidad de Visión	4	$\chi^2(2)$ 17,67***	0,99	0,06	0,02	0,99
Capacidad de liderazgo	6	$\chi^2(9)$ 87,96***	0,92	0,07	0,03	0,98
Capacidad de Comunicación y Persuasión	4	$\chi^2(2)$ 5,63***	0,93	0,05	0,01	0,97
Ambiente Educacional	5	$\chi^2(2)$ 48,54***	0,96	0,04	0,01	0,95
Deseo de independencia	4	$\chi^2(2)$ 1,21***	0,95	0,05	0,06	0,93

Descripción de las escalas del estudio

Table 4 presents descriptive and inferential aspects of the scales used in the study. Average values close to the top categories are observed for the different scales (Agree and Strongly Agree), which suggests that respondents expressed high agreement on the scales surveyed. On the other hand, the correlation between entrepreneurial intention and the rest of the variables was statistically significant. ($p<0.05$) and with moderate positive values as detailed in the table in the value of r.

Tabla 4

Scales of the study	N	R	*M*	*DE*	*r*	*p*
IE	6	6 - 30	23,34	5,33	-	-
FPO	6	6 - 30	20,81	4,24	,547	<.001

CI	5	5 - 25	18,79	4,01	,618	<.001
RE	4	4 - 20	14,00	2,3	,454	<.001
NR	4	4 - 20	15,46	3,09	,617	<.001
CV	4	4 - 20	14,78	3,29	,543	<.001
CLI	6	6 - 30	21,99	4,09	,519	<.001
COCO	4	4 - 20	14,26	3,25	,508	<.001
AED	5	5 - 25	18,60	4,39	,412	<.001
DI	4	4 - 20	12,86	2,53	,632	<.001

N= número de ítems para la escala; R= rango de variación de la escala; M= media aritmética; DE= desviación estándar; r= correlación de Pearson; p= p valor

The sample consisted of 619 participants, the majority of whom were women (54%). With respect to mean age (M= 21.75 years) and standard deviation (DS= 3.49 years). As for the faculty of study, the majority are in Accounting and Financial Sciences (26%), Process Engineering (21%) and Psychology, RRII Cs. of Communication (20%). Regarding the environment, the majority (53%) stated that there is an entrepreneur within their family or friends. Regarding the aspiration to work in the private sector (41%) and in their own business (35%).

In the comparison of entrepreneurial intention according to gender, using t-test to evaluate if there is a difference between the groups, it was found that there is no significant difference between the two groups. (p>0.05).

With respect to the general objective, Table 5 details the coefficients of the regression equation according to gender that explain the intention to undertake

Tabla 5

Modelo	Coeficientes no estandarizados	Coeficientes estandarizados	*t*	*p*
Masculino				
Constante	,36	-	,28	,780
PE	,18	,15	2,76	,006
CI	,31	,22	3,47	,001
NR	,07	,04	,50	,618
CCP	,32	,12	3,35	,001
DI	,60	,29	4,65	,000
Femenino				
Constante	-,22	-	-,18	,861
PE	,23	,18	3,88	,000
CI	,28	,22	4,11	,000
NR	,28	,16	2,88	,004
CCP	,05	,03	,56	,576
DI	,66	,31	5,98	,000
Variable dependiente: Entrepreneurial intent				

In the regression coefficients that are significant with p<0.05 in both gender groups of personal and contextual factors are the FPE (political and economic factors), the CI variable (innovation capacity) and the DI variable (desire for independence).

In detail, in male students, communication and persuasion skills (CCO) are significant according to the bilateral sig of 0.01. (p<0.05)

In female students, the need for fulfillment (NR) was significant with a bilateral sig of 0.004. (p<0.05) that explains the intention to undertake.

V. DISSCUSION

According to the results, entrepreneurial intention does not differ according to gender in Latin America, as explained in the article from Chile [9] in first world countries such as Europe, however, there is a difference in their groups.

Of the personal factors that have not been significant for the intention to undertake in the National University of San Agustin as the leadership capacity and in other countries this explains in this dependent variable. Then in the other non-significant variable of the educational environment happens similar result in the research of Vietnam. [30]

It was verified that [31] innovation is a characteristic that influences the attitude to start a business as explained in the results of table 5 as it is significant in both genders. Furthermore, this factor is relevant and significant in the study by [32] that explores the factors that predict entrepreneurial intention in six Latin American countries.

In the factor of desire for independence (DI) which was found to be significant in both genders ($p<0.05$), this is similar in research in which the desire for autonomy is the main situation for creating an enterprise as detailed in their qualitative study exploring the factors that encourage entrepreneurial intentions in students at the Metropolitan Institute of Technology. [33].

Among the main contextual factors that do not have a significant relationship with entrepreneurial intention is the educational environment. ($P>0.05$) is similar to the study of [14].

VI. CONCLUSION

It was found that there is no significant difference between the gender groups for entrepreneurial intention in undergraduate students of the National University of San Agustin.

With respect to personal and contextual factors, the only factor that differs according to gender is the educational environment.

According to the multiple regression model for entrepreneurial intention, in both sexes the personal factors (desire for independence) stand out; in women the need for fulfillment prevails, while in men the capacity for communication and persuasion. And in the contextual factors, the following were identified as significant: the capacity for innovation and political and economic factors.

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