# Keys to Entrepreneurship: Integral Training of Entrepreneurs in University Scenarios

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**Abstracts:** Objective: To determine key factors that foster entrepreneurship among students at the University and thus lead to integral formation. Methodology: A descriptive, transactional study with a non-experimental design. The sample was non-probabilistic of 95 startup entrepreneurs who started an enterprise while studying at a state University in Colombia. A survey with 23 questions was applied to the entrepreneurs and SPSS software was used for data analysis. Results: The research revealed three key factors that sustain entrepreneurship among students: motivation to generate higher income and thus achieve self-fulfillment, work experience of a startup entrepreneur, and the drive for progressive sales growth. Conclusions: The most important factors that have determined the emergence and sustainability of startup entrepreneurship among university students are as follows: a) motivation to generate higher income and thus achieve sale follows: a) motivation to generate higher income and thus achieve suff-fulfillment; b) work experience as an employee before starting a business, c) the drive for progressive sales growth. Originality: The issue that most affects the permanence of enterprises and a key factor for future entrepreneurs have been clarified, which is represented by university formation in both management and financial areas, to address the problem related to government policies.

Keywords: Entrepreneurship, University, Integral Training, Government Policies.

# 1. INTRODUCTION

Worldwide, entrepreneurship is recognized as a key element for the economic and social development of populations and seeks to promote interest groups that require incentives to move forward and improve their quality of life. Arocena and Sutz explain that to make progress in local, regional, and international contexts "UNESCO operates on the basis of five strategies: a) definition of international standards; b) capacity building; c) organization and dissemination of knowledge (clearinghouse); d) international cooperation catalyzing; e) laboratory of ideas" [1]. This recognizes the importance of the University system in contributing to the development of professional competencies (skills) that lead to the adequate development of students in multiple knowledge areas. Hence, entrepreneurship starts from a laboratory of ideas and offers the opportunity to train entrepreneurs, who are able to devise and plan their own business within their life project, thus emphasizing their willingness to progress and improve their quality of life.

The problem of this research was the fact that many entrepreneurs who, after starting a business, do not always distinguish the key factors to maintain a long-term business; moreover, several entrepreneurs are not always sufficiently considered in the process of creating their ventures. This research is aligned with both national and international interests, within the framework of socioeconomic development, for the benefit of population in general and of people in precarious conditions, such as vulnerable society, among others. In this regard, the national government enacted Law 1014 to promote the culture of entrepreneurship and defined an entrepreneur as a person who possesses "the capacity to innovate, generate goods and services in a creative, methodical, ethical, responsible, and effective manner" [2]. The law stipulates that entrepreneurship must consider acquisition of basic, labor, citizenship and entrepreneurial skills within formal and non-formal education system and its articulation with the productive sector. Accordingly, universities play a fundamental role that leads to integral formation. Likewise, entrepreneurship is defined as the way of thinking, reasoning, and acting oriented to the opportunities for the

development of a business with a global vision that allows the creation of value for socioeconomic development of any country.

#### 1.1. Entrepreneurship and the University Context

There are institutions where there is still resistance to understanding the importance of entrepreneurship at the university level. In this vein, university social responsibility must consider within its institutional policies the incorporation of research projects that contribute to entrepreneurship development [3]. The importance of entrepreneurship promoted by universities empowers the student population in the development of their own entrepreneurship and thus fosters socioeconomic development.

The experience sustained in the university sector shows the work developed by one of the universities located in Medellin-Colombia, which brings together a series of systematic steps so that its students can develop their own entrepreneurship, which can be endorsed as their degree project. In this regard, the phases are as follows: a) identification of a business idea, based on the results of a research guided by an advisor; b) Pre-Incubation phase, where commercial, administrative, productive-technical, financial, legal, and social responsibility aspects are considered; c) Incubation Phase, with the project start-up; d) Potentialization phase (Post-incubation), strengthening a productive unit, based on diagnostics and the design of strategies for a sustainable business.

Furthermore, there is a need to reinforce the role of entrepreneurship in the training of future professionals, as well as in the research processes aimed at business improvement and innovation [4]. In addition, Colombia has experience in the social development, aimed at the inclusion of women in vulnerable conditions [5]. To this end, the Foundation Creaciones Miquelina (FCM) develops a "model in which social and productive factors are integrated through strategic planning focused on social management, production management, and commercial management" (p.46) [6]

The entrepreneurial impulse offered by universities has been a factor that favors business development based on the design of a company. This process is guided by professors to achieve the goal established in the framework of university studies and, at the same time, help to increase the socio-economic sustainability within the country [7]. Therefore, entrepreneurship becomes a driving force for the local economy and the economy worldwide, as well as a mechanism that aims at poverty eradication.

#### **1.2. Governmental Actions Towards Entrepreneurship**

The economy of innovative entrepreneurship deals with a world economy oriented to solve the economic slowdown in most countries. Consequently, entrepreneurship has emerged as a response to the economic deterioration related to unemployment, GDP, and business network. Hence, entrepreneurship policies and programmes consolidate strategies to promote entrepreneurial culture, which has recently given rise to new companies, especially gazelle companies. The economy of the large company is part of economic history and there is a need to build strategies, policies, and programs that address employability issues, giving way to the new economy of entrepreneurs at three levels: the macro level of the country and the environment, the intermediate level of companies, and the basic level of individuals [8].

Considering the foregoing, developing countries have introduced programs to promote entrepreneurship and support the generation of new companies. Colombia, in line with international economic trends, enacted Law 1014 of January 26, 2006, which serves as a framework for the development of activities, strategies, and programs and seeks developing an entrepreneurial culture, reducing unemployment, and creating new businesses, thus generating an entrepreneurial spirit among young people. Furthermore, the law aims at the following objectives: a) to create a link between the education system, business, government, and entrepreneurship, b) to generate competitive and recognized companies in the national and international market, c) to promote innovation and creativity, d) to strengthen existing productive units.

Regarding entrepreneurship, it is important to consider the context, the individual, and the process [9]. It is worth highlighting policies and programs developed by the government. Enterprises consist of businesses that are created out of necessity while others involve entrepreneurs with a higher level of education. However, this research, beyond what has been achieved in Medellin-Colombia, seeks to recognize the characteristics that currently distinguish novice entrepreneurs, as well as to identify predicting factors of startup entrepreneurship.

In Colombia, entrepreneurship education is mandatory from preschool through university, creating communication and professional orientation systems in agreement with the National Learning Service (SENA) [10], the Colombian Institute for the Evaluation of Education (ICFES) [11] and the Administrative Department of Science, Technology, and Innovation (Minciencias) [12]. Entrepreneurs have received a special training, with support programs for business consolidation through activities such as consulting, among other actions that aim at fostering an entrepreneurial culture. The following spaces have been generated: a) Sectoral Business Development Programs (PRODES), coordinated by the Colombian Association of Micro and Medium Enterprises (ACOPI) [13], whose purpose is to develop strategic alliances between companies in the same economic sector; b) CLUSTERS (geographic concentration of companies and organizations of related activities), which finally seek to defend the culture of entrepreneurship, as well as to introduce strategies through mass media and education. This highlights a need for universities to support entrepreneurship, which has led to the emergence of new academic degree projects through startup business creation.

#### 2. METHODOLOGY

This research is descriptive and transactional with a non-experimental design. Descriptive statistics was applied using Excel spreadsheet with the data; afterwards, SPSS tool was employed for the final data processing.

The sample was non-probabilistic of 95 startup entrepreneurs who started a business project during their studies at a state Colombian University.

The data collection tool was a survey that consisted of 23 questions. The survey contained various sociodemographic questions such as age, gender, educational background, and socioeconomic level. The collection data tool also included motivational and management factors, as well as other factors related to the business sector and government policies implicit in their entrepreneurial processes. The tool was validated by five university experts in entrepreneurship, and it also had the reliability of its respective measurement models.

For the data analysis, software SPSS was used. Each factor description was given and, afterwards, relationships between the factors were determined.

The data were divided into three phases: phase 1 - descriptive details of frequencies of the factors; phase 2 - arithmetic averages to highlight the most significant results and establish high, medium, and low levels for each factor; phase 3 - regression assumptions. Criteria for assessing goodness-of-fit in the test of the confirmatory and alternate models were as follows: (a) chi-square likelihood ratio ( $\chi$ 2) and significance level p greater than .05, (b) normalized chi-square ( $\chi$ 2/gl) less than 3, (c) goodness of fit index (GFI) equal to or greater than .90, (d) comparative goodness of fit index (CFI) equal or greater than .90, and (e) root mean squared residuals (RMSEA) equal to or less than .08.

## 3. RESULTS AND DISCUSSION

#### 3.1. Statistical Analysis Results – Phase 1.

Firstly, results on sociodemographic characteristics are shown, such as age, gender, educational background, socioeconomic level, and work experience. The distribution by age range showed that 15.8% of the sample population was under 25 years old, 30.5% was between 26 and 35 years old, 34.7% was between 36 and 45 years old, 12.6% was between 46 and 55 years old, and 6.3% was over 56 years old. The gender distribution showed that 45.3% of the sample population was male and 54.7% was female.

Regarding the distribution by educational background of the respondents, 48.4% had an academic level of technologist (that is 3 years of continuous university studies), which is the highest percentage, while the lowest level of the population sample was 8.4% in high school (that is 11<sup>th</sup> grade at school), 24.2% corresponded to the technical level (that is 2 years of continuous university studies). Additionally, 41.1% respondents corresponded to the middle socioeconomic level. Regarding work experience, 51.6% of the respondents were employed for more than 5 years, 23% were employed for 1 to 5 years, 10.5% were not employed, 10.5% were self-employed, and 4.2% were entrepreneurs. Hence, 74.8% of the respondents had been employees before they started a business project.

Secondly, the data that correspond to a business type are presented: economic business sector, sales performance, and details of the company official registration. Regarding the economic business sector, the results showed that 28.4% of the companies were commercial, 25.4% belonged to the service sector, 18.9% were in other sectors, and 14.7% belonged to manufacturing companies. Additionally, the cultural sector accounted for 8.4% and the ICT sector for 4.2%. Concerning sales performance over the last year, the results showed that 53.7% of companies increased their sales, 34.7% maintained their sales, while 11.6% of companies decreased their sales. It was necessary to verify the sample distribution according to the official registration of companies. It was found that 22% of the companies were officially registered with the Chamber of Commerce, 20% were registered with the DIAN (the National Tax and Customs Directorate), and 12.6% of the companies contributed to Social Security payments.

Thirdly, the results of motivational factors for entrepreneurship evidenced that 31.6% started an enterprise for self-fulfillment, 29.5% were willing to develop an innovative proposal, 29.5% hoped for an extra income and financial self-support, and 9.5% were willing to apply their knowledge.

# 3.2. Statistical analysis results - Phase 2.

To proceed with the second stage of the statistical analysis, details of the arithmetic means are presented, with the results of the three highest arithmetic means, the three lowest arithmetic means, and the arithmetic mean of each factor: a) Government policies, b) Funding, c) Entrepreneurial competencies, d) Entrepreneurship management.

Table 1 relates to Government Policies and shows that the highest arithmetic means corresponded to the following statements: "The government holds business meetings to facilitate the consolidation of new ventures" (EPG5), "The government develops the entrepreneurial culture in the country" (EPG1), and "There are laws that promote innovation and creativity" (EPG6). The lowest arithmetic means were as follows: "There are incentives for payments of parafiscal and other social benefits for workers" (EPG12), "There are economic and funding benefits for the payment of taxes" (EPG11), and "There is access to private monetary resources to implement a business project" (EPG10). In the frequency distribution of the governmental policies construct, 52.4% of the interviewees mentioned that there are almost always governmental incentives for entrepreneurship development.

Table 1. Means and deviations. Government policy					
Description	Ν	ME	DE		
EPG5	95	3.35	1,039		
EPG1	95	3.27	1,216		
EPG6	95	3.14	1,038		
EPG8	95	3.13	1,282		
EPG9	95	3.03	1,259		
EPG4	95	2.99	1,207		
EPG2	95	2.97	1,198		
EPG7	95	2.95	1,124		
EPG3	95	2.81	1,240		

# Table 1. Means and deviations: Government policy

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EPG10	95	2.74	1,222
EPG11	95	2.65	1,201
EPG12	95	2.42	1,107

Source: Compiled by authors.

Table 2 shows that the Funding factor presented the highest means in the statements:

"I perceive that I have leadership personality traits and enough experience to start a business" (F11),

"My product or service has a well-defined market" (F12),

"My business has a well-defined added value that the customer requires" (F14).

Meanwhile, the lowest means were as follows: "The information provided is confusing" (F9), "Entities require projected financial statements" (F4), and "Entities require audited financial statements". (F3).

Table 2.	wealls and deviations. I und	ang	
Funding factor components	Ν	ME	DE
F11	95	4,15	1,010
F12	95	4,15	0,989
F14	95	3,89	1,067
F5	95	3,80	1,260
F6	95	3,80	1,268
F13	95	3,73	1,076
F7	95	3,62	1,298
F10	95	3,58	1,365
F2	95	3,38	1,256
F15	95	3,32	1,205
F8	95	3,28	1,310
F1	95	3,23	1,340
F3	95	3,18	1,321
F4	95	3,16	1,257
F9	95	2,98	1,229

Table 2. Means and deviations: Funding

Source: Compiled by authors.

Furthermore, the highest arithmetic means of the Entrepreneurial Competencies factor shown in Table 3 were as follows: "I listen carefully when someone talks" (CE13), "I value willingness of my co-workers" (CE15) and "when faced with a challenge, I do whatever is necessary and change my strategy to overcome an obstacle " (CE5). Meanwhile, the lowest were: "I am more interested in the outcome than in the payment I will receive for my work" (CE4), "I calculate risks intentionally when I start any activity." (CE3) and "I act on my own before circumstances force me to." (CE1).

Table 3. Mea	Table 3. Means and deviations: Entrepreneurial Competence				
Description	Ν	ME	DE		
CE13	95	4,23	0,994		
CE15	95	4,23	0,973		
CE5	95	4,19	0,971		
CE12	95	4,18	0,989		
CE10	95	4,14	1,017		

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CE9	95	4,12	1,009
CE16	95	4,04	1,202
CE14	95	4,01	0,995
CE2	95	3,97	1,056
CE11	95	3,92	1,048
CE6	95	3,89	1,057
CE8	95	3,86	1,038
CE7	95	3,83	0,986
CE1	95	3,79	1,119
CE3	95	3,78	1,064
CE4	95	3,75	1,237

Source: Compiled by authors.

Table 4 shows the results of the highest arithmetic means for the Entrepreneurship Management factor: "We constantly improve the quality of our products and services" (GE3), "We enrich a productive mentality in the organization" (GE12), and "We work on the permanent improvement of processes to achieve an optimal level of operations" (GE10). On the contrary, the lowest were: "We focus on our competitors" (GE13), "We make sales and target market projections to achieve sales growth" (GE14) and "We continuously reduce the cost of non-productivity in our operations" (GE15).

Table 4.	Means and deviations: Entrepreneurship	Management	
Description	Ν	ME	DE
GE3	95	4,13	0,970
GE12	95	3,96	0,956
GE10	95	3,93	1,034
GE13	95	3,89	0,973
GE14	95	3,87	0,902
GE15	95	3,85	0,934
GE8	95	3,78	1,002
GE16	95	3,76	0,964
GE9	95	3,71	1,020
GE17	95	3,67	1,036
GE18	95	3,65	1,060
GE2	95	3,64	0,988
GE1	95	3,62	1,150
GE4	95	3,62	1,113
GE7	95	3,61	1,249
GE20	95	3,56	1,127
GE21	95	3,56	1,137
GE19	95	3,52	1,090
GE11	95	3,51	1,071
GE5	95	3,46	1,080
GE6	95	3,00	1,149

Table 4. Means and deviations: Entrepreneurship Management

Source: Compiled by authors.

Therefore, the frequency distribution with consolidated data for the Government Policies factor showed that 51.6% of interviewees agreed that Government Policies promote entrepreneurship, while the remaining respondents disagreed. As for the Funding factor, 88.2% of surveyed subjects mentioned that they totally agreed on

the financial sector requirements to grant loans to the newly emerged entrepreneurs, while the rest of the respondents disagreed. The consolidated frequency distribution for the Entrepreneurial Competence factor revealed that 92.6% of the respondents affirmed that they had enough competencies to start a business project. The consolidated frequency distribution for the Entrepreneurship Management factor showed that 88.4% of the respondents agreed that they had a proper leading style.

# 3.3. Statistical analysis results – Phase 3.

In the third phase of the statistical analysis, regression assumptions were reviewed. In the multiple linear regression model, Entrepreneurship Management factor has been defined as the dependent variable, while Funding factor, Entrepreneurial Competence, and Government Policies as independent variables. To validate the model, the assumptions of linearity, independence, homoscedasticity, normality, and non-collinearity were validated. From this analysis, it was observed that the dependent variable Entrepreneurship Management had linearity with the independent variables Entrepreneurial Competence and Funding. On the other hand, it was evident that there was no linearity with Government Policies. Table 5 analyzes the error independence between the dependent and independent variables and provides the Durbin-Watson statistic that verifies the error independence because 1.836 is between 1.5 and 2.5.

		Table 5. Error	Independence		
Model	R	R <sup>2</sup>	Adjustment R <sup>2</sup>	SE	Durbin-Watson
1	0,885ª	0,783	0,780	0,3618 2	
2	0,891 <sup>b</sup>	0,795	0,790	0,3536 2	1,836
a.	Predictor variable: en	trepreneurial compe	etence		
b.	Predictor variables: e	ntrepreneurial and f	inancial competence		
С.	Dependent variable:	entrepreneurial man	agement		

Table F. Errer Independence

Source: Compiled by authors.

On the other hand, the dispersion analysis performed on SPSS software (ZPRED = typed forecasts and ZRESID = typed residuals) verifies the homoscedasticity assumption since errors have constant variance.

Table 6 with the normality test of residuals shows the results of Kolmogorov-Smirnov and Shapiro-Wilk statistics to verify that the variables involved in the model follow a normal distribution. In Kolmogorov-Smirnov, the significance level 0.200 > 0.05 can be observed; thus, it can be defined that the variable follows the Normal Law, and the linear regression analysis can be conducted. On the other hand, with Shapiro-Wilk significance level 0.006 < 0.05, it can be concluded that the data do not have a normal distribution; therefore, significance correction was necessary.

Та	ble 6. Norma	ality of re	esiduals				
	Kolmogorov-Smirnov <sup>a</sup>				Shapiro-Wilk		
	Mean	Ν	р	Mean	N	р	
Standardized residual	0,075	95	0,200*	0,960	95	0,00 6	
<ul><li>* This is the lowest limit of true meaning.</li><li>a. Correction for small significance</li></ul>							

Source: Compiled by authors.

Table 7 shows the regression analysis for two alternatives. In model A, the independent variable Entrepreneurship Management is explained by entrepreneurial culture by 0.783. In model B, Entrepreneurship Management is explained by two factors: Entrepreneurial Competence and Funding, with an R of 0.795. It is proceeded to work with model B because it shows a higher prediction factor. When analyzing Durbin-Watson of

1.836 that is in the interval from 1.7 to 2, it can be affirmed that model B generalizes the factors that predict Entrepreneurship Management.

Table 7. Regression results (subsequent steps)Model Summary°								
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson			
1	0,885 <sup>a</sup>	0,783	0,780	0,36182				
2	0,891 <sup>b</sup>	0,795	0,790	0,35362	1,836			

Source: Compiled by authors.

Table 8, Anova analysis, shows that both model A and model B predict Entrepreneurship Management significantly.

	Tabla 8. Anova						
			A	NOVAª			
Model		Sum of	df	Mean Square	F	Sig.	
		Squares					
	Regression	43,879	1	43,879	335,185	0,000 <sup>b</sup>	
1	Residual	12,175	93	0,131			
	Total	56,054	94				
	Regression	44,549	2	22,275	178,130	0,000 <sup>c</sup>	
2	Residual	11,504	92	0,125			
	Total	56,054	94				
a. Dep	a. Dependent Variable: GEtotal						
b. Prec	b. Predictors: (Constant), CEtotal						
c. Pred	lictors: (Constant),	CEtotal, Ftotal					

Source: Compiled by authors.

Table 9 shows the analysis of coefficients. When the degree of significance is evaluated, it is evident that in both model A and model B the factor Entrepreneurial Competence is significant. However, in model B the degree of significance of the Funding factor is 0.23 where this factor affects Entrepreneurship Management depending on circumstances. The collinearity analysis is also included, which evaluates two statistics; the first one refers to the tolerance coefficients and, in both models, they are above 0.20. For model A, it is 1.0 and for model B, it is 0.479. The second statistic evaluated is the Variance Inflation Factor VIF, which must be above 10 units; however, in the analysis, it shows 1.0 for Model A and 2.89 for Model B, which means that the factors evaluated do not have collinearity.

			Table 9. C	oefficients			
			Coeffic	cients <sup>a</sup>			
Model	Unstar	ndardized	Standardized	t	Sig.	Collinearity	Statistics
	Coeffic	cients	Coefficients				
	В	Std. Error	Beta			Tolerance	VIF
(Constant)	0,402	0,183		2,198	0,030		
CEtotal	0,821	0,045	0,885	18,308	0,000	1,000	1,000
(Constant)	0,322	0,182		1,766	0,081		
CEtotal	0,715	0,063	0,771	11,289	0,000	0,479	2,089
Ftotal	0,142	0,061	0,158	2,315	0,023	0,479	2,089
a. Dependent	Variable: Gl	Etotal					

Source: Compiled by authors.

According to the socio-demographic data, 65.2% of the participants were 26-45 years old. Regarding gender, the results showed that 45.3% were male respondents, while 54.7% were female respondents. As for educational level, 48.4% were technologists and 24.2% were technicians, which accounted for 72.6%. The socioeconomic level showed that 41% of the surveyed entrepreneurs belonged to the middle class, while 20% belonged to the lower middle class, whereas 39% was in the upper middle class.

The factors that encouraged the surveyed entrepreneurs to develop their business were as follows: regarding the motivation for entrepreneurship, 31.5% claimed that their motivation was self-fulfillment, 29.5% responded that it was to increase their income, another 29.5% indicated that they were motivated to develop an innovative proposal, and the remaining 9.5% were willing to apply the knowledge they had acquired. Another factor of entrepreneurship was work experience of the respondents. The participants replied that 51.6% were employed for more than 5 years, 23% between 1 and 5 years, 10.5% were self-employed, 10.5% of the respondents were unemployed, and 4.2% of the participants were entrepreneurs. The sales performance factor indicated that 53.7% of enterprises had increased their sales, while 34.7% had remained at the same level, while 11.6% had decreased.

The results showed that Entrepreneurial Competence was the factor that most predicted Entrepreneurship Management. Similarly, Business Funding was the second predictor, whereas Governmental Policies did not predict Entrepreneurship Management. To foster youth entrepreneurship processes and, according to Law 1014 published in the Colombian Official Gazette on January 26, 2006, educational institutions (IE) must introduce pedagogical actions as well as develop basic citizen competencies that promote entrepreneurial attitudes among students [14]. Hence, institutions must design micro-curricula with topics and methodologies that contribute to idea generation, innovation, and business plan structuring.

In the same vein, a research project has been developed by different institutions to encourage entrepreneurship in Medellin-Colombia. Both public and private universities support entrepreneurs at the beginning of a business project and provide loan forgiveness programmes. The aim of a start-up project is to be sustainable over time and avoid short-term disappearance. Some public organizations implement loan forgiveness if entrepreneurs comply with the execution, control and evaluation plan during the implementation, monitoring, and strengthening process [15]. On the other hand, some existing programmes such as entrepreneurship laboratories, innovation routes, funding mechanisms, seed capital, among others, are not widely known, which makes entrepreneurial opportunities limited and unequal [16]. Therefore, it is recommended that efforts be focused on dissemination and communication channels that help to provide sufficient information for entrepreneurship in the country.

The results of this research reveal that the Government policies that exist to promote and support entrepreneurship in the country are not known by a large part of entrepreneurs, which explains why entrepreneurs have a low perception of the benefits they can achieve. It also follows that the government does not place emphasis on adequately promoting the entire structure of norms that exist to encourage the generation of companies that will ultimately contribute to the economic growth of the whole country. In the same vein, the results of this research show that there is still a need to strengthen Entrepreneurial competence in higher education. Accordingly, universities and management programs need to incorporate subjects with practical content so that students identify financial behavior of a new business project and consider different variables involved in the formulation and development of a start-up and thus achieve business success [17]. Although entrepreneurs receive training in different organizations, including governmental institutions, such efforts are insufficient and require greater willingness from both government and financial entities [18].

Moreover, the difficulties that startup entrepreneurs face concerning government policies are related to the forms of funding, the tax rate, among other aspects. There is an urgent need to incorporate young people in the programming of government policies for entrepreneurship, consider their needs, encourage employment, as well as to foster innovation and the harmonious economic growth of society [19]. Different funding schemes for entrepreneurship have been the subject of review because entrepreneurs are not able to obtain a secure funding source and therefore must resort to their own resources.

It is worth mentioning the convergence with other studies, where funding is considered as a factor of development in an entrepreneurial ecosystem. Therefore, facilitating actions should be generated for entrepreneurs to ensure their evolution, due to repetitive problems with a financial sector that is not able to generate adequate support for each entrepreneurship [20].

## CONCLUSIONS

This research revealed that the characteristics of startup entrepreneurs from a state university were the following: age groups varied between 26 and 45 years old; as for the gender characteristics, the percentages were similar, 55% women versus 45% men, which points to increasing gender equality worldwide and equal opportunities for all citizens. The dominant educational background varied between technicians and technologists, with 72.6% of the respondents. The prevailing socioeconomic level was middle class. Moreover, the most important factors that determined the emergence and sustainability of startup business among university students were as follows: a) motivation to generate higher income and thus achieve self-fulfillment; b) work experience as an employee before starting a business, c) the drive for progressive sales growth.

Regarding latent problems that require attention to ensure business sustainability are government policies that mainly deal with funding systems for startup entrepreneurs. In the same vein, there is an urgent need to strengthen future entrepreneurs through integral university formation, namely, management sciences and other subjects that can incorporate knowledge through specific areas and can offer different sort of training to encourage the newly emerged entrepreneurs to start an enterprise. Moreover, the University must provide a follow-up support for the newly created business as part of an undergraduate thesis. Hence, valuable information can be gathered to continue supporting entrepreneurs throughout the first years of a business project.

#### REFERENCES

- [1] Arocena y Sutz (2016). Universidades para el desarrollo. Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura. UNESCO, Uruguay. Disponible en:http://www.unesco.org/fileadmin/MULTIMEDIA/FIELD/Montevideo/pdf/PolicyPapersCILAC-UnivParaDesarrollo.pdf
- [2] Congreso de Colombia (2006). Ley 1014 de 2006. De fomento a la cultura del emprendimiento. Disponible en: http://www.mincit.gov.co/loader.php?lServicio=Documentos&lFuncion=verPdf&id=2331&name=Ley1014de2006.pdf
- [3] Chirinos Araque Yamaru Valle, Pérez Peralta Claudia Milena (2016). La responsabilidad social universitaria: emprendimiento sostenible como impacto de intervención en comunidades vulnerables. Revista EAN, vol. 1, núm. 81, pp. 91-110. Disponible en: http://www.scielo.org.co/pdf/ean/n81/n81a05.pdf
- [4] Gutiérrez Ossa, J., Gutiérrez, J., & Asprilla, E. (2013). Dimensión de la gestión tecnológica en las pymes: Perspectiva colombiana. ECONÓMICAS CUC, 34(2), 13-24. Disponible en: https://revistascientificas.cuc.edu.co/economicascuc/article/view/592
- [5] Rodríguez M. y Hernández J. (2017). Emprendimiento social para la inclusión de mujeres en condiciones de vulnerabilidad: experiencia Fundación Creaciones Miquelina. Experiencias de emprendimiento social en Iberoamérica. Libros electrónicos nº 67. Editorial Universidad de Almería. Disponible en: http://www.riberesco.org/wp-content/uploads/2017/05/Experiencias-de-emprendimiento-social-en-Iberoam%C3%A9rica-prime-1.pdf
- [6] Martínez Tovar, M. (2020). Modelo de gestión de los intangibles estratégicos fundación creaciones Miquelina.
- [7] Ariza, J. F., & Retajac, A. (2020). Descomposición y determinantes de la pobreza monetaria urbana en Colombia. Un estudio a nivel de ciudades. Estudios Gerenciales, 36(155), 167-176. Disponible en: Disponible: https://doi.org/10.18046/j.estger.2020.155.3345
- [8] Vesga, R. (2008). Emprendimiento e innovación en Colombia: ¿Qué nos está haciendo falta? Observatorio de Competitividad del Centro de Estrategia y Competitividad.
- [9] Cardona, M., Vera, L., & Tabares, J. (2014). Las Dimensiones Del Emprendimiento Empresarial: La Experiencia De Los Programas Cultura E. Y Fondo Emprender En Medellín (Dimensions of the Entrepreneurship: The Experience of the Programs Cultura E. and Emprender in Medellin). Center for Research in Economics and Finance (CIEF), Working Papers, (08-15).
- [10] Servicio Nacional de Aprendizaje SENA (s.f.). Sea Emprendedor SENA. Disponible en: https://www.sena.edu.co/esco/trabajo/Paginas/seaEmprendedor.aspx
- [11] Khan, S., Jam, F. A., Shahbaz, M., & Mamun, M. A. (2018). Electricity consumption, economic growth and trade openness in Kazakhstan: evidence from cointegration and causality. OPEC Energy Review, 42(3), 224-243.
- [12] Instituto Colombiano para la Evaluación de la Educación ICFES (s.f.). Icfes, mejor Saber. Disponible en: https://www.icfes.gov.co/
- [13] Minciencias (s.f.). funciones del Ministerio de Ciencia Tecnología e Innovación. Disponible en: https://minciencias.gov.co/ministerio/funciones
- [14] ACOPI (s.f.). Asociación colombiana de las medianas, micro y pequeñas empresas. Disponible en: https://www.acopi.org.co/ 513

- [15] Montes, J. (2016). Estudio de la oferta de recursos técnicos y tecnológicos para favorecer los procesos de emprendimiento juvenil. Recuperado de https://www.incae.edu/sites/default/files/reporte\_nacional\_final\_-\_colombia\_final\_corregido.pdf
- [16] Gutiérrez, J., Romero, J., Díaz, M. y Sulbarán, N. (2017). Emprendimiento como fuente de desarrollo de la empresa familiar: algunas reflexiones sobre Venezuela. Revista de Ciencias Sociales, 23(4), 98-107.
- [17] Buitrago, J. (2014). Emprendimiento en Colombia. Administración y desarrollo, 43(59), 7-21.
- [18] Cabrera Ortiz, J. Y., Lozano Zabala, J. B. y Nobles Camacho, M. J. (2017). Propuesta pedagógica sobre educación financiera para jóvenes emprendedores de último semestre de la facultad de administración de empresas (formulación de materia electiva) de la UCC sede Bogotá (Tesis de licenciatura). Universidad Cooperativa de Colombia, Bogotá, Colombia.
- [19] Marulanda Valencia, F. A. y Morales Gualdrón, S. T. (2016). Entorno y motivaciones para emprender. Revista Escuela de Administración de Negocios, 81, 12-28.
- [20] Rodríguez M. Guzmán V. Díaz de León y Gutiérrez (2018). Las Políticas gubernamentales y su relación con en el financiamiento y el emprendimiento para las PyMEs en México. Recuperado de file:///C:/Users/Jgutierrez/Downloads/Dialnet-LasPoliticasGubernamentalesYSuRelacionConEnElFinan-7830960.pdf
- [21] Calderón J. Reinoso J. y González J. (2019). La financiación como factor de desarrollo en un ecosistema emprendedor, Colombia. Disponible en: https://repository.ut.edu.co/server/api/core/bitstreams/273f8baa-ec19-4ad2-8649-2a93bb10efaf/content

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