



Research Article

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Factors Associated with Entrepreneurial Behavior in Students of a Peruvian University

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Abstract

The purpose of this research was to determine the association of factors in the entrepreneurial behavior of students at a Peruvian university. The methodology is quantitative, non-experimental and multivariate correlational. The participants were 500 students distributed proportionally in four academic schools: Administration, Accounting, Law and Industrial Engineering, during the academic period 2022-II. The results were obtained by applying the logistic regression model that when analyzing the different factors, it is evident that within the personal factors, age, marital status, having children, and the career they study, are associated with entrepreneurial behavior; from the economic factors, the employment situation, monthly income and having their own home, are also associated with this behavior, and finally from the cultural factors, the idea of entrepreneurship and the sector where they wish to undertake are associated with entrepreneurial behavior as well. From these results, it can be inferred that the majority of students at a Peruvian university have demonstrated entrepreneurial behavior.

Keywords: Entrepreneurial behavior, factors of entrepreneurial behavior, entrepreneurship

1. Introduction

Entrepreneurship has gained importance in recent years worldwide, as it represents a great challenge and a necessity for a country to grow economically, and also contribute to the social welfare of the population. Generally, when talking about entrepreneurship, it is focused on people who are born with these skills. However, entrepreneurship does not necessarily require being born with these skills, because nowadays it can also be promoted from the university, with curricula that include and encourage the entrepreneurial culture in their students (Echeverri-Sánchez *et al.*, 2018); (Idrovo *et al.*, 2020); (Romero-Parra *et al.*, 2022).

In that sense, entrepreneurial behavior implies having entrepreneurial attitudes, defined as a set of attributes and skills that allow creating and achieving the necessary knowledge to decide to take a risk when starting a new business (Espinoza, 2018) (Espinoza *et al.*, 2019); (Contreras *et al.*, 2020).

In today's dynamic and controversial world, encouraging entrepreneurial behavior at the university level has become essential. The university plays a preponderant role, it must be committed to train students focused on achieving entrepreneurship from the classroom, through the generation of curricula that contain entrepreneurship as a transversal axis in all study cycles, resulting in professionals with the vision and mission of entrepreneurship and not just thinking about a place to work. The university, likewise, must be articulated with the enterprise and the surroundings to generate professionals that society needs, professionals with entrepreneurial behavior that drive the economy in their country. This aspect is elemental in the generation of wealth (Idrovo *et al.*, 2020); (Guzmán-Pérez *et al.*, 2020); (Vélez *et al.*, 2020); (Aledo, 2022); (Valenzuela-Keller *et al.*, 2021).

In Latin America, specifically during the last decade, countries such as Uruguay, Colombia and Chile, have given importance to research on entrepreneurial intention in students of educational institutions (Galleguillos-Cortés *et al.*, 2019); (Valenzuela-Keller *et al.*, 2021). In this regard, Diez, 2020, Valenzuela-Keller *et al.*, 2021, D'Armas *et al.*, 2022, state that there is no consensus regarding the most specific and relevant factors in entrepreneurial development, because currently there is still the paradigm that entrepreneurs are born as such, generating several investigations on the subject. All of them converge in a common point, that entrepreneurship is generated as a product of what is learned in educational institutions.

It is true that it is not possible to determine exactly which factors determine entrepreneurial development, but we can consider some research in this regard that considers, among others, factors such as demographic profile, contextual factors and personality characteristics. In the first case, they consider age groups, gender and previous experience; in the second, they highlight educational, environmental and cultural aspects; and in the last case, they highlight being self-efficient, trusting, being autonomous, controlling their motivation and deciding to take risks (Galleguillos-Cortés *et al.*, 2019); (Diez, 2020); (Valencia-Arias *et al.*, 2022); (Romero *et al.*, 2021); (López *et al.*, 2021).

In the case of Colombia, for example, it was projected to investigate the factors of entrepreneurship in virtual education, which came with the pandemic to stay, especially in distance students, who should not be exempted from being strengthened with the entrepreneurial spirit (Valencia-Arias *et al.*, 2022); (Garavito-Hernández *et al.*, 2023); (Alvites *et al.*, 2020).

Peru is also in the new trend of training prospective entrepreneurs and is ranked number three in the world, specifically in the countries that have a large number of early-stage entrepreneurship ("Young Peruvian Entrepreneurs: Leaders of Peru 2021," 2021).

The research posed the following question: Is there an association of factors in entrepreneurial behavior in students of a Peruvian university? The study applies scientific knowledge on the factors of entrepreneurial behavior, identifying them in order to reformulate the study plans to promote their development and application in university students. Likewise, this research will serve as a reference for future research related to the topic. The scientific method was used, developed through duly validated statistical measurement instruments. In practice, it will allow implementing the teaching of entrepreneurial behavior as a new approach in higher education, in order to achieve successful professionals through entrepreneurship. Finally, it aims to train students and future professionals in

the development of entrepreneurial behavior, which will result in enterprises that will generate sources of employment and contribute to the economy and, therefore, to the development of the country.

The research had several purposes: to determine the association of factors in entrepreneurial behavior in students of a Peruvian university; to demonstrate the association between biological factors and entrepreneurial behavior in students of a Peruvian university; to corroborate the association between social factors and entrepreneurial behavior in students of a Peruvian university; to demonstrate the association between cultural factors and entrepreneurial behavior in students of a Peruvian university.

Entrepreneurial activity is determined by multiple factors of a personal, social, cognitive, economic, political and cultural nature, considering the impact that any of these may have, as a potentiator of success, on entrepreneurial initiatives.

According to Romero *et al.*, 2021, most of the students are oriented to develop business ideas, although administrative procedures, lack of experience and financing are shown as the main inhibitors of entrepreneurship. Likewise, Echeverri-Sánchez *et al.*, 2018, indicate that students seek to create a company due to the expectation of labor independence. Aledo, 2022, worked with two groups of students, developed business plans in the experimental group, managing to establish that these contribute to awaken the entrepreneurial intention and acquire soft skills for their talent. Also (Masri *et al.*, 2021) established that between participation in entrepreneurship education learning and entrepreneurial intention there is a positive and significant relationship of moderate level.

With respect to the work of Chunxu *et al.*, 2021, who in their results show that a good entrepreneurial education improves the quality of employment and its disposition to it in university students. In addition, Valenzuela-Keller *et al.*, 2022, indicate the existence of positive differences that can be applied to entrepreneurship education. At the same time, Valenzuela-Keller *et al.*, 2021, argue that self-esteem, personal or internal control, risk-taking and innovation, and need for achievement are dimensions that coincide with the theory of entrepreneurial attitude orientation.

The study by Valencia-Arias *et al.*, 2022, has identified relevant relationships between attitude, behavioral control, entrepreneurial behavior and current behavioral control with respect to students' entrepreneurial intention. Likewise, (Lin *et al.*, 2023) determined that there is a positive and significant correlation between the entrepreneurial intention and the attitude towards innovation, entrepreneurship and the perceived behavioral control.

In other words, the studies suggest that universities work on teaching models aimed at developing entrepreneurial knowledge and skills in their students, in order for them to acquire a more structured view of the entrepreneurial sector.

It is worth mentioning what Basso *et al.*, 2022, report about students who entered the entrepreneurship training program in comparison with academics who do not have such a program. Students have high rates of academic participation and entrepreneurial potential. At the same time, Thi *et al.*, 2022, have revealed that entrepreneurship curriculum and content significantly affect students' entrepreneurial drive. (Pan & Lu, 2022) determined that theoretical entrepreneurship education generates that every day the rate of college students with entrepreneurial intention increases. They have also established that it influences entrepreneurial intention through entrepreneurial self-efficacy. (Lin *et al.*, 2023) found that in social networks there is content about testimonials about entrepreneurship, some of these were initiated from their student stage. This has generated an impact on young people who, knowing technological tools and new fields, awakened their interest in entrepreneurship, not only from the commercial or business point of view, but also conceiving the idea of being content creators and using their social networks for advertising.

2. Methodology

Type of study descriptive, quantitative approach and non-experimental, prospective, cross-sectional design (Hernández & Mendoza, 2018).

The population consisted of all university students of a private university. The questionnaires were administered using non-probabilistic convenience sampling, selecting a sample of 500 university students, which was calculated with the formula for infinite population, using a confidence of 95%, and an adjusted error of 3.8% (Malhotra, 2008).

Surveys were administered using a non-probabilistic convenience sampling method, selecting a sample of 500 university students, which was calculated using the formula for an infinite population, with a 95% confidence level, and a 3.8% margin of error (Malhotra, 2008).

The sample of 500 students was proportionally distributed among the four academic schools: Administration, Accounting, Law, and Industrial Engineering, assigning a number of students in proportion to the relative size of each school within the total population. This proportional allocation aimed to achieve an even representation of the different study areas in the final sample to reduce biases."

Regarding potential limitations, the use of convenience sampling instead of probabilistic sampling could introduce some bias, as not all individuals in the population had the same chance of being selected. However, this approach was necessary given the time and resource constraints of the study. The proportional distribution of the sample also sought to mitigate potential biases related to the academic schools.

For data collection, the technique applied was the survey and the instrument was a questionnaire, which was validated by nine psychology professionals, obtaining an Aiken V of 99%. The reliability of the instrument was determined by the omega coefficient of the Entrepreneurial Behavior Scale in Peruvian university students, performing a point and interval estimation with a confidence level of 95%, finding a high reliability of the scale at a general level with a value of 0.94; and a very good reliability in its three dimensions: Attitude, Subjective Norm and Perceived Social Control with coefficients ranging from 0.83 to 0.85 (Ventura-León, 2022).

3. Results

Table 1: Descriptive statistics of the variables of interest in the study, according to non-entrepreneurial and entrepreneurial group of entrepreneurial behavior in undergraduate students of a private university.

Factors	Entrepreneurial behavior				Total	%	
	Non-entrepreneurial		Entrepreneur				
Age	From 16 to 21	8	2%	317	63%	325	65%
	From 22 to 27	1	0%	145	29%	146	29%
	From 28 to 33	1	0%	28	6%	29	6%
Gender	Male	5	1%	202	40%	207	41%
	Female	5	1%	288	58%	293	59%
Marital status	Single	9	2%	426	85%	435	87%
	Married	0	0%	12	2%	12	2%
	Cohabitant	0	0%	43	9%	43	9%
	Widow(er)	0	0%	1	0%	1	0%
	Divorced	1	0%	8	2%	9	2%
Children	Yes	1	0%	66	13%	67	13%
	No	9	2%	424	85%	433	87%
Career	Administration	2	0%	170	34%	172	34%
	Accounting	2	0%	72	14%	74	15%
	Law	3	1%	98	20%	101	20%
	Industrial Engineering	3	1%	150	30%	153	31%
Cycle	From I to III	5	1%	162	32%	167	33%
	From IV to VII	5	1%	206	41%	211	42%
	From VIII to X	0	0%	122	24%	122	24%
Work situation	Not working	8	2%	289	58%	297	59%
	Working	2	0%	201	40%	203	41%
Monthly income	No income	8	2%	289	58%	295	59%
	From 300 to 800	0	0%	115	23%	115	23%
	From 801 to 1500	2	0%	76	15%	78	16%
	From 1501 to more	0	0%	10	2%	10	2%
Belongs to a social organization	No	8	2%	437	87%	445	89%

Factors		Entrepreneurial behavior				Total	%
		Non-entrepreneurial		Entrepreneur			
	Yes	2	0%	53	11%	55	11%
Owns a home	No	7	1%	310	62%	317	63%
	Yes	3	1%	180	36%	183	37%
Has an idea of entrepreneurship	No	5	1%	77	15%	82	16%
	Yes	5	1%	413	83%	418	84%
Sector where I would like to undertake	None	5	1%	76	15%	81	16%
	Service	1	0%	119	24%	120	24%
	Industry	1	0%	88	18%	89	18%
	Commerce	3	1%	207	41%	210	42%
Total		10	2%	490	98%	500	100%

Source: Data obtained from the sample

Table 1 shows that 98% of university students in a private university have an entrepreneurial behavior, from this result it can be seen that 63% are students between 16 to 21 years old, 58% are female, 85% are single, 85% do not have children, 34% study Administration, 41% are from IV to VII cycle, 58% do not work, 58% have no income, 87% do not belong to a social organization, 62% do not own their own home, 83% have an entrepreneurial idea, and finally 41% prefer to undertake in the commercial sector.

Table 2: Association of factors to entrepreneurial behavior in undergraduate students at a private university.

Factors	Entrepreneurial behavior	B	Desv. Error	Wald	gl	Sig.	Exp(B)	95% confidence interval for Exp(B)	
								Lower limit	Upper limit
	Intersection	-10.704	8.375	0.000	1	0.984			
Age	From 22 to 27	-1.000	1.891	0.280	1	0.006	0.368	0.009	4.976
	From 28 to 33	-0.382	1.613	0.056	1	0.008	0.682	0.029	6.090
Marital status	Single	-10.362	13.673	0.000	1	0.010	3.16	0.038	3.056
	Married	-11.978	4.342	0.003	1	0.005	6.27	7.287	9.345
	Cohabitant	-10.820	10.303	0.012	1	0.004	2.004	8.378	11.345
Children	Yes	-7.599	13.671	0.000	1	0.010	0.001	1.324	6.44
Career	Administration	-0.468	1.049	0.199	1	0.007	0.626	0.080	4.890
	Accounting	0.699	1.127	0.385	1	0.004	2.011	0.221	18.298
Work situation	Not working	5.530	3.260	0.001	1	0.008	2.237	2.575	3.446
Monthly income	From 300 to 800	3.811	0.000		1	0.01	4.212	4.212	45.212
	From 801 to 1500	-0.715	1.681	0.000	1	0.007	0.489	3.394	5.008
Owns a home	No	0.373	0.766	0.238	1	0.026	1.453	0.324	6.521
Has an idea of entrepreneurship	Yes	7.801	9.187	0.000	1	0.002	2.049	0.942	2.102
Sector where I would like to undertake	Service	-5.859	9.187	0.000	1	0.004	0.003	0.112	2.998
	Commerce	0.413	1.292	0.102	1	0.019	1.512	0.120	3.005

Source: Data obtained from the sample

Table 2 shows that there are factors that obtained a significance value of less than 0.05, which indicates their significant association with entrepreneurial behavior in university students of a private university. These factors are: Age (from 22 to 33 years), marital status (single, married and cohabiting), having children, studying careers such as Administration and Accounting, not working, having income between 300 to 1500 soles, not owning a home, having an entrepreneurial idea and, finally, entrepreneurship in commerce and service sectors.

Table 3: Summary of the model for entrepreneurial behavior in university students.

Step	Logarithm of the likelihood-2	Cox and Snell R-square	Nagelkerke R square
1	611068 ⁸	0.332	0.429
2	532106	0.371	0.485
3	544321	0.391	0.514
4	542001	0.400	0.525
5	530345	0.411	0.541
6	525113	0.415	0.548

Source: Data obtained from the sample

Table 3 shows a smaller -2LLL (-2 log likelihood) value, indicating that the model obtained, in step 6, is a better fit to the data than the models in the previous steps. Likewise, the Cox and Snell R-squared and Nagelkerke R-squared coefficients of determination, obtained in step 6, indicate that 41.5% or 54.8% of the variation of the dependent variance entrepreneurial behavior is explained by the variables included in the model, the percentage of variance is considerably explained by the variables.

Table 4: Classification table of observed and predicted cases

Observed	predicted		
	Entrepreneurial behavior		Correct percentage
	Non-entrepreneurial	Entrepreneur	
Entrepreneurial behavior	0	10	0.0
Global percentage	0	490	100.0
			98.0

Source: Data obtained from the sample

Table 4 shows that of the 500 cases of entrepreneurial behavior, 490 are correctly classified by the model, representing a specificity (considering predicted or expected probability $p < 0.5$) of 98%. It is expected that in the population the model correctly classifies 98% of the cases.

4. Discussion

The results obtained show an association among the following factors: age, marital status, children, career, employment status, monthly income, housing, entrepreneurial idea and entrepreneurial sector with the entrepreneurial behavior of university students in a private university. Having obtained a significance of less than 5%, 98% of university students have an entrepreneurial behavior, 63% are aged 16 to 21, 58% are female, 85% are single, 85% have no children, 34% study administration, 58% do not work, 58% have no income, 62% do not have their own home, 83% have an idea of entrepreneurship, 41% would prefer to undertake in the commerce sector. These results compare with those of Tarapuez *et al.*, 2018, who indicate that the idea of entrepreneurship and the sector of entrepreneurship are associated with entrepreneurial intention in university students in Latin America. Likewise, Ma *et al.*, 2020, Barroso *et al.*, 2020, indicate that entrepreneurial intention has a positive correlation with attitude towards innovation, entrepreneurship and perceived behavioral control.

With respect to biological factors and entrepreneurial behavior in university students, the results show that those students who are in the 22 to 33 age range feel the desire to start a business that generates income. In addition, they are more aware that this will allow them to satisfy their

needs and have a better quality of life. The results presented by Galleguillos-Cortés *et al.*, 2019, Kobylińska & Ryciuk, 2022, Valencia-Arias *et al.*, 2022, Romero *et al.*, 2021, López *et al.*, 2021, about the factors found to be associated with entrepreneurial behavior propose to: demographic (age and gender), contextual (educational, environmental and cultural aspects) and personality characteristics (autonomy, self-efficacy, motivation and risk decision). As for biological factors, marital status (single, married and cohabiting) and those with children, they were found to be associated with entrepreneurial behavior. These results complement the research of Valenzuela-Keller *et al.*, 2021, Rajchamaha & Prapojanasomboon, 2022, who indicate that the factors that interfere with entrepreneurial attitude are: self-esteem, personal or internal control, risk-taking and innovation, and need for achievement.

Regarding the association of social factors with entrepreneurial behavior, a significant association was found in students who do not work and those who do not have their own home, specifically in the accounting and administration careers. The study complements the findings of Chunxu *et al.*, 2021, who in their results show that a good entrepreneurial education in university students improves the quality of employment and their willingness to work. In that sense, Masri *et al.*, 2021, Romero-Galisteo *et al.*, 2022, Liu *et al.*, 2019, also found a moderate level, positive and significant so participation in the learning of entrepreneurial education contributes to providing effective strategies for entrepreneurship and, in the same way, contributes to developing entrepreneurial intention.

The findings of this study carry important practical implications for the formulation of university policies and programs designed to enhance entrepreneurial education. Specifically, the associated factors identified, such as age, marital status, employment status, and monthly income, can inform the design of initiatives targeting key student groups more likely to exhibit entrepreneurial behavior. For instance, programs could more specifically target students aged 22 to 33 years, who are single and childless, not working, and do not own their own home. Moreover, the findings concerning having an entrepreneurial idea and the sector in which they wish to venture are pertinent for tailoring training and mentorship according to the students' interests and business plans. Regarding unexpected outcomes, it is noteworthy that 85% of the respondents do not have children, which could facilitate their focus on starting a business due to fewer family responsibilities. This warrants further investigation to understand whether indeed students without children exhibit greater entrepreneurial behavior.

Finally, regarding cultural factors, it was found that having the idea of entrepreneurship and the sector where one wants to undertake indicate a significant association with the entrepreneurial behavior of university students. The results obtained are strengthened by the findings of Espinoza *et al.*, 2019; Zhao, 2022, Aliedan *et al.*, 2022, who determined that there is a high intentionality index and that it is strongly explained by the attitude towards the behavior and by the self-efficacy in university students.

5. Conclusion

The university students have demonstrated an entrepreneurial behavior that projects them to become future entrepreneurs upon completion of their professional careers. It has been possible to determine that this acquired behavior has been associated with certain factors such as age, marital status, having children, career, work situation, monthly income, owning their own home, having an idea of entrepreneurship and the sector where they would like to undertake. Finally, it can be affirmed that the work of the university in the formation and awareness of the idea of entrepreneurship in students has been effective, so it is expected to see students achieving their goals and seeing the ideas generated during their academic training become a reality.

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