University students' perception of the entrepreneurial ecosystem and social entrepreneurial intention

Methodology
A quantitative methodological approach was used, through inferential statistical data processing techniques such as: one-way ANOVA variance test, Student's t-test and Pearson correlation, which allow to know the significant differences and the relationship between the variables under study.

Objective
To analyze the perception of university students regarding the university entrepreneurial ecosystem and the social entrepreneurial intention, as well as the relationship between the two variables and their significant differences.

Introduction
Social entrepreneurship is an alternative to satisfy needs that have not yet met. A clear exponent of the entrepreneurial spirit is the youth, a main reason for the academia to be involved in developing the competencies and skills that foster it.

Result or conclusion 1
This research allows to confirm and demonstrate fundamental aspects to be considered for the creation of university educational policies that enable the development of competencies and the use of opportunities, consolidating a social entrepreneurial culture for the youth

Results or conclusion 2
From a gender perspective, the results show that women studying at the University of Cuenca have more social entrepreneurial intentions and a greater perception of the university social entrepreneurial ecosystem than men.

Result or conclusion 3
This research shows that the social return is higher in cities where their public universities are placed in better positions within the ranking

Art. 4
Vol. 12 Núm. 24

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Percepción de estudiantes universitarios frente al ecosistema emprendedor y la intención emprendedora social

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Abstract: *entrepreneurship today has become a priority to promote the sustainability of countries. According to the Global Entrepreneurship Monitor, Ecuador is the country with the highest level of entrepreneurship in Latin America. Specifically, social entrepreneurship has gained momentum as an alternative to satisfy needs that have not been addressed at the governmental level. In this context, the article analyzes the relationship and the significant differences between the entrepreneurial ecosystem and the social entrepreneurial intention of the students of the University of Cuenca; using the variables gender and faculties as transversal treatment. To meet this objective, the sample was constituted by 856 students, which was filtered, generating a robust sample of 543 students. The analysis of results used inferential statistical techniques such as: ANOVA one way, Student´s t test and Pearson correlation, showing that there are no significant differences by sex in the students´ perception of the entrepreneurial ecosystem and the social entrepreneurial intention. In addition, students consider that the entrepreneurial ecosystem differs among the twelve faculties, identifying the faculty of Dentistry and faculty of Arts with a suitable ecosystem compared to the perception that more intervention is required in the ecosystem of the faculty of Philosophy and faculty of Law. Finally, the positive relationship between the two variables is an indicator that should be worked on in strategies to promote the social entrepreneurial culture at the university.*

Keywords: entrepreneurship, social entrepreneurship, entrepreneur, entrepreneurial ecosystem, social entrepreneurial intention, higher education, young university students, gender focus.

Retos, 12(24), 2022 Revista de Ciencias de la Administración y Economía
Printed ISSN: 1390-6291; Electronic ISSN: 1390-861
www.retos.ups.edu.ec

Resumen: el emprendimiento se ha convertido en una prioridad para promover la sostenibilidad de los países. De acuerdo al Global Entrepreneurship Monitor, Ecuador es el país con mayor nivel de emprendimiento en América Latina. Específicamente, el emprendimiento social ha tomado impulso como alternativa para satisfacer necesidades que no han sido atendidas a nivel gubernamental. En este contexto, el artículo analiza la relación y las diferencias significativas entre el ecosistema emprendedor y la intención emprendedora social de los y las estudiantes de la Universidad de Cuenca, utilizando las variables sexo y facultades como tratamiento transversal. Para cumplir este objetivo se trabajó con una muestra representativa de 856 estudiantes, que fue depurada, generando una muestra robusta de 543 estudiantes. En el análisis de resultados se utilizó técnicas de estadística inferencial como: prueba de varianza ANOVA una vía, prueba T student y correlación Pearson, que muestran que no existen diferencias significativas por sexo en la percepción del estudiantado frente al ecosistema emprendedor y la intención emprendedora social. Además, consideran que el ecosistema emprendedor difiere entre las doce facultades, identificando a las facultades de Odontología y Artes con un ecosistema adecuado frente a la percepción de que se requiere mayor intervención en el ecosistema de las facultades de Filosofía y Jurisprudencia. Finalmente, la relación positiva entre las dos variables demuestra la necesidad de trabajar en estrategias que impulsen la cultura emprendedora social en la universidad.

Palabras clave: emprendimiento, emprendimiento social, emprendedor, ecosistema emprendedor, intención emprendedora social, educación superior, jóvenes universitarios, enfoque de género.

Introduction

Entrepreneurship has become relevant given the social, economic and environmental crisis facing the world, as an alternative to mitigate the lack of opportunities, unemployment, inequality and exclusion. Entrepreneurship involves transforming a new idea into an innovative business, through the management of skills, the development of creativity, persistence and exposure to risk. In this way, it affects the economic, social justice and respect for nature (Díaz Bretones and Lejarriaga Pérez de Las Vacas, 2018).

Entrepreneurship is seen as "the attitude in people, a culture and capacity in companies and a characteristic of the environment" (Suárez-Daza, 2014). Specifically, at the individual level, the factors to consider entrepreneurship are "the level of education, skills, abilities to identify opportunities, preferences for risk and psychological resources" (Suárez-Daza, 2014). All of them can be developed in the educational ecosystem. Meanwhile, at the intermediate and macro level, it is essential to develop an entrepreneurial culture, the recognition of the closest context and the understanding of the environment in which it develops, in order to generate a collective identity (Suárez-Pineda *et al.*, 2018).

This premise enables considering entrepreneurship as a process that allows innovating and creating, identifying opportunities to build new services, products, production methods, business models, etc. It is an alternative to transform realities through the creation of social value with innovation, seeking to ensure the common good.

To have an approach to the concept of social entrepreneurship, the premises of Michael Young are considered, who addressed the idea of social entrepreneurship between 1950 and 1990, however, in the late 90's, Bill Drayton founder of Ashoka, popularized this term (Saavedra-García *et al.*, 2020), which was adopted to designate forms of organization to implement innovative, creative and sustainable solutions to social problems.

Social entrepreneurship characterizes by its impact on social and economic development because the collective social construction, along to the actions of the State, seeks to respond to the problems of society by creating sustainable social value (Guzmán and Trujillo, 2008). Therefore, social entrepreneurship revolves around social renewal, creativity and innovation.

Several authors have conceptualized social entrepreneurship; hence, some conceptualizations are presented below to propose a holistic concept that involves different perspectives.

From the analysis of these concepts, it is evident that social entrepreneurship involves elements such as social value, innovation and creativity, search for opportunities, social change, risk acceptance, solution of social problems, guarantee of the common good, satisfaction of shared needs and economic sustainability. In this regard, Saavedra García *et al.* (2020) define social entrepreneurship as:

(…) a process that pursues the social mission of developing goods and services to meet the needs of the less favored people (social value creation); seeks innovative solutions that have not been applied and generates projects to carry them out and in many cases with no cost (social innovation); efficiently manages financial, human and material resources in order to generate financial profit (financial sustainability); seeks and takes advantage of opportunities to solve social needs to establish a social balance (social vision), and assumes risks by developing projects that initially will not be profitable (social profitability). (p. 20)

Table 1

Conceptualization of social entrepreneurship

Authors	Definition of social entrepreneurship
Chell (2007)	It is a process that allows creating and taking advantage of opportunities, considering controlled alienable resources, oriented to the generation of wealth that can be reinvested to ensure its sustainability, and social value.
Thompson (2008)	It is an entrepreneurial activity characterized by its intention and social orientation.
Austin *et al.* (2012)	Innovative activity with social value, developed in the non-profit sector.
Fournier (2011)	"…any action committed by a social group to satisfy a need shared by all members of the group and for which each member is willing to pool and share the resources that make possible the conduction of the goal" (p.12).
Pérez-Briceño *et al.* (2017)	"…its objective is to provide a solution to a social problem in those sectors of the economy and state action are ineffective and the social entrepreneur is a non-profit organization" (p.7).
Cantillo-Campo *et al.* (2021)	"(…) is any action, initiative in the socioeconomic sphere of a nation aimed at satisfying the needs of the community, to ensure the common good of the population" (p. 218).

Note. Table constructed from the premises of (Chell, 2007; Thompson, 2018; Fournier, 2011; Austin *et al.*, 2012; Pérez Briceño *et al.*, 2017).

According to the concepts of social entrepreneurship described above, this research conceptualizes it as a strategy of innovation and creativity that seeks opportunities to generate services or products that help meet the needs of society and, in this way, improve their living conditions.

Social entrepreneurship involves people with diverse characteristics, expressed from different perspectives. From psychology, they are considered individuals whose behaviors, virtues and values take them to self-realization and entrepreneurship by taking risks. The classical school emphasizes their innovative abilities. Business management highlights their abilities to plan, organize and motivate. From a leadership approach, their qualities and abilities to seize opportunities and assume risks are visible (Leoro and Farfán, 2017). For Saavedra García *et al.* (2020), the social entrepreneur characterizes by his or her vocation, vision and social ethics; he or she ventures as an agent of change because he or she creates values and assumes risks to generate social changes. In addition, he/she identifies opportunities and resources to innovate; has the ability to manage, through the development of democratic leadership, facilitating the construction of social capital.

Based on these concepts, entrepreneurs are considered potentially innovative when it comes to generating new ideas and putting them into action. They are characterized by identifying opportunities, taking risks, projecting themselves communally, by their social vocation, by the development of synergies, by being persistent, visionary and pragmatic.

On the other hand, the analysis of social entrepreneurship from a gender perspective shows that gender is a conditioning factor of entrepreneurship, since women and men have different preferences, behaviors, motivations, competencies and skills when it comes to entrepreneurship. However, women have difficulties in entrepreneurship due to the social construction of gender and the

assigned roles that generate inequalities and limit their full participation (Portillo and Millán, 2016).

For Gálvez and Suárez (2019), women's entrepreneurial intentions are influenced by their family role, driving them to be entrepreneurs motivated by necessity or by the lack of job opportunities. Hence, entrepreneurship represents a job opportunity that allows them to find a balance between family and work life. Accordingly, Braches and Elliott (2017) state that entrepreneurship generates self-employment for women, contributing to their economic empowerment and covering family needs.

Women's entrepreneurship is generally framed within emerging economies that face adverse contexts, where their participation is limited by multiple barriers such as access to and use of financial, economic, educational, training and advisory resources needed to start, strengthen, enhance and sustain their enterprises (CLADEA, 2018).

Therefore, there is an urgent need to reformulate the dynamics of inequality that are evidenced in asymmetrical structural power relations that limit equal opportunities between genders in the different aspects of life. In this context, education is considered an essential strategy to generate structural transformations to promote the fulfillment of the rights of human beings, without any discrimination whatsoever.

Hence, it is necessary to analyze the role of the education system in the formation of professionals that respect differences, diversity and equal opportunities, endowed with knowledge that leads to face uncertainties, to take risks and decisions to live in society, forging a life project through the achievement of shared knowledge that leads to a dignified coexistence and a happy life (Cadena, 2020).

From this perspective and to favor social entrepreneurship, it is necessary to influence the construction of entrepreneurial environments, where there are laws, regulations and policies, investments and human talent that facilitate the transformation of ideas into valuable products and services (Campo-Ternera *et al.*, 2019).

The university has a major impact on the development of entrepreneurial intention and behavior and on the acquisition of competencies, skills and abilities that allow entrepreneurship. For this reason, university education should promote an entrepreneurial ecosystem that articulates "knowledge in a recursive way, learning-unlearning-relearning" (Cadena, 2020), to respond to the interests and needs of students, with the aim of building equitable and egalitarian relationships.

From this perspective, higher education is a strategic ally through the development of an entrepreneurial ecosystem defined as "the dynamic, institutionally integrated interaction between attitudes, skills and entrepreneurial aspirations of individuals, driving the allocation of resources through the creation and operation of new businesses" (GEI Report, 2019). It is in this context in which this research takes place, having as object of study a higher education institution, the University of Cuenca, to analyze the perception of students regarding the university entrepreneurial ecosystem and the social entrepreneurial intention; as well as the relationship between the two variables and the existing significant differences, using inferential statistical techniques that demonstrate the need to work and promote strategies to promote social entrepreneurial culture at the university.

Therefore, the entrepreneurial ecosystem is a complex system, due to the interaction of its six interrelated components, which, according to Ali *et al.* (2021), constitute strategic areas of entrepreneurship: financing, which refers to the access and availability of resources that facilitate the creation or strengthening of entrepreneurship. Innovation refers to the ability and capacity to innovate and develop new entrepreneurial ideas (AEI, 2014).

Culture, norms that affect the development of entrepreneurial capabilities are based on the opportunities generated in the localities (Ács *et al.*, 2014). Advice and support are components that provide support and assistance from various actors who with their knowledge, experience, contact networks and investment contribute to the entrepreneur and promote entrepreneurship (AEI, 2014). The regulatory and market framework is constituted by the set of laws, decrees, ordinances and regulatory framework that encourage and protect entrepreneurship (AEI, 2014). Finally, the human talent that with knowledge, skills and abilities, developed from the impact of

the educational system, local culture and social conditions, create and develop innovative ideas for entrepreneurship (Weinberger, 2019).

Out of these components, the study delves into human capital, which corresponds to skilled and unskilled labor, family qualifications, and specific training in entrepreneurship, as it is an essential element for creating an entrepreneurial ecosystem. Therefore, the educational system becomes the engine for social entrepreneurial training because of its impact on the promotion, preparation and motivation for entrepreneurship, i.e., for motivating "the self-recognition of the conviction to create a business and the conscious planning for its conduction in a future time" (Soria-Barreto *et al.*, 2016, p. 26) known as entrepreneurial intention. From this perspective, Adekiya and Ibrahim (2016), consider that to foster entrepreneurial intention, it is necessary to promote perceived appropriateness and effectiveness, as well as to improve the quality of entrepreneurial training facilities in education.

There are several models to measure entrepreneurial intention, among them, the construct proposed by Icek Ajzen in 1991, which is based on the proposal of the theory of planned behavior (TPB). For this author, entrepreneurial intention can be predicted from "attitude", "perceived behavioral control or self-efficacy" and "subjective norms" (Ajzen, 1991, p.179). This model explains the perception interaction of perceived control, subjective norms and personal attraction and their influence on intention, allowing a more accurate measurement of entrepreneurial behavior (Siles-Nates, 2020). Authors such as Liu, Kulturel-Konak and Konak (2021), propose a model based on methodological triangulation that allows measuring the effectiveness of entrepreneurship education from three dimensions, competencies, barriers and entrepreneurial intentions. However, Icek Ajzen's model is chosen for this study.

Accordingly, the results of the study conducted by Guerrero and Santamaría (2020) show the importance of the educational, governmental, scientific and financial bodies that make up the entrepreneurial ecosystem in motivating entrepreneurial activities. They also identify the fact of possessing knowledge and skills, having reference models, identifying business opportunities, seeking social equity and social and economic

status through entrepreneurship. On the other hand, Padilla-Angulo (2019), states that "the value of student associations to increase EI (...) through their impact on entrepreneurial attitudes are fundamental in the formation of EI" (p. 45). This is relevant information for both academia and institutions to promote entrepreneurship.

Materials and Method

The study is quantitative, using data processing techniques of inferential statistics, which allow to know the significant differences and the relationship of the entrepreneurial ecosystem and the social entrepreneurial intention of university students under study.

The unit of analysis is defined as the students of the University of Cuenca enrolled during the cycle March/2019 to August/2019, from fifth to tenth cycles onwards, delimiting a population of 3757 students. Being a large population, it was decided to work with a sample, based on the following factors: confidence level of 95 %, permissible margin of error of 2.94 %, standardized proportion of success and failure of 50 %, determining a sample size of 856 students (368 men and 488 women). The sampling method applied was stratified random with proportional allocation by sex of students and faculties in which they are enrolled to consider their heterogeneity.

In the process of debugging the database, it was determined that 36.57 % of the cases have at least one missing data in the Likert scale questions of the components of the investigated social entrepreneurship axis in which the entrepreneurial ecosystem and social entrepreneurial intention variables are found. This makes it impossible to apply the dimension reduction technique (factor analysis by principal components) directly, because the linear combination of the association of the items discards the cases (rows) that have missing data; therefore, for the analysis of the data, the base must be purified, either by discarding or handling the missing cases. According to Van Der Ark and Vermunt (2010) a missing data handling method is applied, since ignoring the missing data problem could lead to statistically biased results and erroneous conclusions.

There are different procedures for handling missing data, generally grouped into traditional and modern methods (Baraldi and Enders, 2010). Cuesta *et al.* (2013), in their study called "Missing data and psychometric properties in personality tests", apply several techniques for treating these data, both traditional and modern, finding that the Expectation-Maximization (EM) method achieves a better overall fit compared to the other criteria studied. For this reason, the EM method is used for treating the missing data of the items (questions) of the scales and subscales of the Social Entrepreneurship axis.

The EM algorithm is a two-step iterative process E and M to find maximum plausible estimators of the parameters of interest; this method consists of replacing missing values with estimated values, then estimating the parameters, re-estimating the missing values assuming that the new parameter estimates are correct, re-estimating the parameters and the missing values, and so on iterating until converging (Badler *et al.*, 2005).

For Badler *et al.* (2005) the use of the EM method requires the fulfillment of two assumptions: 1) the use of categorical or quantitative variables and 2) that the assumption of randomness of the data is fulfilled, i.e., that the missing data are completely random or MCAR, since failure to comply with this assumption would imply biased estimates. In this context, the items that form the scale and subscales of the Social Entrepreneurship axis are all Likert-scaled, fulfilling the first assumption. The second assumption is tested by contrasting Little's hypothesis in the SPSS program vs. 21.

After testing the assumptions, the missing data analysis is performed in the SPSS vs. 21 program for all the Likert scale items that explain the dimensions of the Social Entrepreneurship axis. This results in a complete database of 856 cases.

To check the robustness of the results, a database is generated by discarding all the cases that have some missing value in the items of the scale and subscales of the investigated Social Entrepreneurship axis. This sub-sample is made up of 543 cases; if the initial parameters, N, Ni, Z, pi and qi were maintained for the calculation of the sample by means of stratified random sampling with proportional allocation, the sampling error for the sample of 543 students corresponds to 3.89 %.

In summary, there are two databases to analyze: (1) a sample of 856 cases, with missing data in the Likert scale questions on the variables of the Social Entrepreneurship component, and (2) a sample of 543 cleaned cases, with no missing data in the questions on the variables of the component of interest.

The survey was used as a tool for gathering information, and it was composed of several sections, one of them the Social Entrepreneurship axis; the questionnaire validated from the various theories of entrepreneurship was used, and was systematized and coupled by the project "Potential for Social Entrepreneurship in Latin America" carried out by the Research Institute of the Faculty of Administrative Sciences of Universidad San Martin de Porres (USMP, 2017) Lima-Peru. In addition, the questions of this questionnaire were revised and the terminology was coupled to the student university context, to be applied in this research.

There are four variables used in this study, two observable variables: gender and faculty; and two latent variables "university entrepreneurial ecosystem" and "social entrepreneurial intention", which were generated from the confirmatory factor analysis by principal components in the SPSS vs.21 program. The first latent variable was made up of 9 Likert scale items (see Table 2), which allow analyzing the conditions of both the physical and relational environment, in which young students develop at the university for promoting their social entrepreneurial skills; this scale is based on the study by Lürthje and Franke (2004), translated into Spanish by Álvarez *et al.* (2018), cited by Giraldo Mejía and Vara Horna (2018). The second "Social Entrepreneurial Intention" groups five Likert scale items (see Table 3), and analyzes the real motivation for the practical social entrepreneurial application by the unit of analysis, in this case young university students; this scale is based on Moriano (2005) and Liñán and Chen (2009), cited by Giraldo-Mejía and Vara-Horna (2018).

Table 2

Items about the university entrepreneurial ecosystem

Question/item	Likert Scale
1. School partnerships train university social entrepreneurs in financial, organizational, academic and technical aspects.	Never Rarely Sometimes Regularly Always
2. School partnerships promote networking between university social entrepreneurs and public and private institutions.	
3. Is it a favorable environment for developing social entrepreneurship fostered among university leaders?	
4. Do student leaders promote ideas and/or spaces for social entrepreneurship?	
5. Do school associations or university departments have support programs for the creation of social enterprises (financial support, institutional support, academic endorsements, etc.)?	
6. In the school or department associations of the university, is there support from the main representative to initiate social ventures?	
7. Are there spaces (trainings, courses, etc.) related to social entrepreneurship in the school associations or university departments?	
8. Do school or university department associations promote spaces for internships in social entrepreneurship (projects, management models, internships, research internships, etc.)?	
9. Do the school associations or university departments have physical spaces and specialized personnel that support and provide advice in the planning and execution of social enterprises?	

Note. Questions coupled to the university context on the questionnaire validated from the various theories of entrepreneurship, compiled by the project "Potential for Social Entrepreneurship in Latin America", conducted in 2017 by the Research Institute of the Faculty of Administrative Sciences of Universidad San Martín de Porres, Lima-Peru, based on the study by Lürthje and Franke (2004), translated into Spanish by Álvarez, López and Chafloque (2018), cited by Giraldo Mejía and Vara Horna (2018).

Table 3

Items about social entrepreneurship intention

Question/item	Likert Scale
1. Have you ever considered developing a social enterprise?	*For items 1, 3 and 4:* *Never* *Rarely* *Sometimes* *Regularly* *Always*
2. Do you plan to develop a social entrepreneurship initiative that addresses the social problems of your family, organization, region or community?	
3. Do you recommend your peers to develop social entrepreneurship initiatives that seek to solve collective problems in their environment?	*For items 2 and 5:* *Strongly disagree* *Disagree* *Neither agree nor disagree* *Agree* *Strongly agree*
4. Will your proposed future venture initiatives prioritize social rather than financial benefits?	
5. If the opportunity and resources were available, would you undertake a social enterprise?	

Note. Questions coupled to the university context on the questionnaire validated from the various theories of entrepreneurship, compiled by the project "Potential for Social Entrepreneurship in Latin America", executed in 2017 by the Research Institute of the Faculty of Administrative Sciences of Universidad San Martín de Porres, Lima-Peru, based on the study of Moriano (2005) and Liñán and Chen (2009), cited by Giraldo-Mejía and Vara-Horna (2018).

Before continuing with the research results, Table 4 presents the reliability and validity indicators of the construct of the latent variables under study. It is evident that the results are satisfactory because the Kaiser-Meyer-Olkin (KMO) indices are very good, higher than 0.80, proving that a factor analysis with the sample information is pertinent; in addition, it is contrasted that the correlation matrix between the items that form each component variable do not form identity matrices by means of Bartlett's test of sphericity. Likewise, the percentages of average variance extracted (AVE) of each factor in the two samples are very good, higher than 50 %, as recommended by authors such as Merenda (1997), Chin (1998) and Detrinidad (2018).

Regarding the reliability of the component variables in the two samples, reliable indicators are also observed, since the Cronbach's Alpha and Composite Reliability coefficients are higher than 0.70 according to Cortina (1993) and Prieto and Delgado (2010), respectively. The Alpha coefficient and composite reliability are statistics for measuring the internal consistency of the factors, with the difference that the latter considers the presence of other factors being analyzed in a study.

Table 4

Reliability and validity of the university entrepreneurial ecosystem and social entrepreneurial intention variables

Purified base (n1=543)						
Variables	**KMO**	**Bartlett. Sig.**	**Factor loadings (range)**	**Variance extracted AVE**	**Alpha Cronbach**	**Composite Reliability**
University EntrepreneJurial Ecosystem	0.933	0.000	0.818-0.882	73.162	0.954	0.961
Social Entrepreneurial Intention	0.845	0.000	0.781-0.852	65.106	0.863	0.903
Imputed basis (n2=856)						
University Entrepreneurial Ecosystem	0.938	0.000	0.822-0.877	73.778	0.955	0.962
Social Entrepreneurial Intention	0.827	0.000	0.755-0.843	61.962	0.844	0.890

Note. Table constructed from the database of the questionnaire on Social Entrepreneurship and Leadership, collected in the framework of the research project "Social Leaders and Young University Students Transforming Realities. Explanatory analysis of their social entrepreneurial profile", to young university students of University of Cuenca-Ecuador, period March-August 2019, n1=543 and n2=856.

All analyses were processed using the Statistical Package for the Social Sciences (SPSS) version 21 software. Inferential statistical techniques are used for the presentation and analysis of results, applying the Student's t-test for independent samples in the analysis of differences in the university entrepreneurial ecosystem and the social entrepreneurial intention of students, in which the sex variable is the cross-sectional variable (independent variable) and the main variables of analysis are the ecosystem and the social en-trepreneurial intention (dependent variables). Likewise, the significant differences in the main construct variables mentioned above are presented according to the treatment variable faculties, using the one-way ANOVA variance test. Finally, the relationship between the university entrepreneurial ecosystem and social entrepreneurial intention is presented and analyzed using Pearson's correlation coefficient, presenting the results in a cross-sectional way through the variable gender and faculties.

Results

Significant differences in the entrepreneurial ecosystem and social entrepreneurial intention of students at the University of Cuenca, by gender and faculty

On average, female students have a higher level of "social entrepreneurial intention" [$\underline{x} = 3.63, s = 0.773; \underline{x} = 3.64; s = 0.756$] than men [$\underline{x} = 3.55; s = 0.96; \underline{x} = 3.58; s = 0.891$] both in the cleaned and imputed bases; however, with 95 % confidence there is not enough statistical evidence to affirm that the difference between the mean scores of men and women are different in the two samples [$t(433.09) = -1.025, p > 0.05; t(541) = -1.050, p > 0.05$]

(see Table 5), which means that it cannot be statistically affirmed that women have higher entrepreneurial intention than men.

Likewise, female students on average have a higher perception of the "university entrepreneurial ecosystem" [$\underline{x} = 2.27, s = 0.964; \underline{x} = 2.35, s = 1.007$] than men [$\underline{x} = 2.18, s = 0.944; \underline{x} = 2.30, s = 0.971$], both in the cleaned and imputed bases; however, with 95 % confidence there is not enough statistical evidence to claim that the difference between the mean scores of men and women are different in the two samples [$t(541) = -1.050, p > 0.05; t(854) = -0.769, p > 0.05$]; therefore, it cannot be statistically affirmed that women have a higher perception level of the university entrepreneurial ecosystem compared to men.

Table 5

Demographic profile by gender of mean entrepreneurial ecosystem scores and social entrepreneurial intention of young university students

Sex	Purified base			Imputed base		
	Entrepreneurial Intention					
	Media	**Desv.**	**Dif. of averages**	**Media**	**Desv.**	**Dif. of averages**
Man	3.55	0.9603	-0.079	3.58	0.8913	-0.057
Woman	3.63	0.7734		3.64	0.7563	
Levene's test	9.438	Sig.= 0.002		7.871	Sig.= 0.005	
Test t*	-1.025	Sig. (bilateral)=0.306; gl=433.088		-0.987	Sig. (bilateral)=0.324; gl=714.885	
Effect size (r)	0.049			0.037		
	University entrepreneurial ecosystem					
Man	2.18	0.9442	-0.087	2.30	0.9706	-0.053
Woman	2.27	0.9636		2.35	1.0074	
Levene's test	0.002	Sig.=0.962		0.287	Sig.=0.592	
Test t	-1.050	Sig. (bilateral)=0.294; gl=541		-0.769	Sig. (bilateral)=0.442; gl=854	
Effect size (r)	0.045			0.026		

Note. Table constructed from the database of the questionnaire on Social Entrepreneurship and Leadership, collected in the framework of the research project "Social Leaders and Young University Students Transforming Realities. Explanatory analysis of their social entrepreneurial profile" to young university students of the University of Cuenca-Ecuador, period March-August 2019, n1=543 and n2=856.

On the other hand, if evaluating the mean scores of the latent variables under study with respect to faculties, there are no statistically significant differences in the mean scores of "social entrepre-

neurial intention" among the students of the 12 faculties of the university; this result is consistent both in the cleaned base and in the imputed base $[F(542) = 1.427, p > 0.05; F(714.885) = -0.987, p > 0.05]$; in other words, this means that it cannot be statistically affirmed that students from the Faculty of Agricultural Sciences have more social entrepreneurial intention than students from the other faculties of the University of Cuenca.

On the contrary, it is found with 95 % confidence that there are statistically significant differences between the mean scores of the variable "university entrepreneurial ecosystem" between the different faculties of the university in the two samples. The results are consistent with the robust tests of equality of means: Brown-Forythe $[BF(330.95) = 2.498, p < 0.05; BF(539.17) = 2.619, p < 0.05]$ and Welch $[W(145.93) = 2.591, p < 0.05; W(232.19) = 2.593, p < 0.05]$; these robust tests are applied, since the assumption of equality of variances between the populations of the categorical variable "faculties" of the one-way ANOVA test is not met (see Table 6).

After testing the statistically significant difference in the mean scores of the latent variable "university entrepreneurial ecosystem", the students of the Faculty of Dentistry perceive a higher level of entrepreneurial ecosystem in their faculty $[\underline{x} = 2.66, s = 0.9488; \underline{x} = 2.75, s = 1.033]$, compared to the students of the faculty of Philosophy, Letters and Educational Sciences $[\underline{x} = 1.89, s = 0.7958; \underline{x} = 2.08, s = 0.945]$ who are the ones who report a lower entrepreneurial ecosystem score in their faculty.

At a general level, the mean perception scores of the entrepreneurial ecosystem by students of the different faculties of the university are low, between 2.66 -1.89 and 2.75-2.08, i.e., if compared to the Likert scale used it means that "almost never-rarely" they perceive an entrepreneurial environment in their faculties. In other words, students of the University of Cuenca perceive a low level of entrepreneurial ecosystem $[\underline{x} = 2.23, s = 0.9554; \underline{x} = 2.33, s = 0.992]$, i.e., they rarely perceive a university environment that encourages them to be entrepreneurial.

Table 6

Educational profile in the entrepreneurial ecosystem and social entrepreneurial intention of young university students

Faculty	Purified base		Imputed base	
	Social Entrepreneurial Intention			
	Media	Desv.	Media	Desv.
Faculty of Agricultural Sciences	3.93	0.8602	3.94	0.8255
Faculty of Hospitality Sciences	3.88	0.9298	3.82	0.7931
School of Economics and Administrative Sciences	3.67	0.7712	3.66	0.7307
Faculty of Psychology	3.67	0.8522	3.70	0.7805
Faculty of Medical Sciences	3.59	0.8273	3.67	0.8391
Faculty of Jurisprudence and Political and Social Sciences	3.57	0.8172	3.60	0.8097
Faculty of Philosophy, Letters and Educational Sciences	3.54	1.0153	3.54	0.8805
Faculty of Arts	3.52	0.9078	3.61	0.7952
Faculty of Chemical Sciences	3.51	0.8495	3.55	0.8075
Faculty of Architecture and Urban Planning	3.50	0.8852	3.50	0.7980
School of Dentistry	3.43	0.7521	3.31	0.6437
School of Engineering	3.32	0.8135	3.32	0.7872

	3.60	0.8583	3.62	0.8170
Levene's test	0.257	Sig.= 0.993	0.452	Sig.=0.932
Test F (ANOVA)*	1.427	Sig. (bilateral)= 0.156; gl=542	-0.987	Sig. (bilateral)= 0.324; gl=714.885
Effect size (n)	0.029		0.029	
University entrepreneurial ecosystem				
School of Dentistry	2.66	0.9488	2.75	1.033
Faculty of Arts	2.64	1.0209	2.74	0.984
Faculty of Psychology	2.59	0.8398	2.59	0.861
Faculty of Hospitality Sciences	2.58	1.0229	2.60	1.034
Faculty of Architecture and Urban Planning	2.49	1.0146	2.44	0.871
Faculty of Agricultural Sciences	2.40	1.1777	2.47	1.223
School of Economics and Administrative Sciences	2.24	0.9577	2.33	0.907
Faculty of Medical Sciences	2.19	0.9474	2.31	1.062
Faculty of Chemical Sciences	2.17	0.7986	2.23	0.834
School of Engineering	2.05	0.9204	2.26	0.963
Faculty of Jurisprudence and Political and Social Sciences	1.99	0.9479	2.10	1.032
Faculty of Philosophy, Letters and Educational Sciences	1.89	0.7958	2.08	0.945
	2.23	0.9554	2.33	0.992
Levene's test	1.853	Sig.= 0.043	3.456	Sig.= 0.000
Test F (ANOVA)				
Brown-Forsythe test)	2.498	Sig. = 0.005; gl=330.95	2.619	Sig. = 0.003; gl=539.17
Welch's test	2.591	Sig. = 0.005; gl=145.93	2.593	Sig. = 0.004; gl=232.19
Effect size (n)	0.051		0.033	

Note. Table constructed from the database of the questionnaire on Social Entrepreneurship and Leadership, collected in the framework of the research project "Social Leaders and Young University Students Transforming Realities. Explanatory analysis of their social entrepreneurial profile" to young university students of the University of Cuenca-Ecuador, period March-August 2019, n1=543 and n2=856.

Relationship between the university entrepreneurial ecosystem and social entrepreneurial intention, according to gender

In the analysis of the relationship between the university entrepreneurial ecosystem and social entrepreneurial intention, a statistically positive linear relationship is found between the latent variable "university entrepreneurial ecosystem" and "social entrepreneurial intention" of students at the University of Cuenca $(\rho = 0.125, p < 0.05; \rho = 0.119, p < 0.05)$. However, according to Cohen (1988), cited in Hernández *et al.* (2018), the correlation is weak, meaning that the X and Y observations are offset by the corresponding mean values $\underline{x}$, y.

Likewise, at a more disaggregated level, by gender, a statistically positive linear relationship is found between the entrepreneurial intention of female students and their perception of the entrepreneurial ecosystem within the university. In contrast, no statistically positive linear relationship is found between the entrepreneurial intention of male students and their perception of the university entrepreneurial ecosystem. The results are consistent across the two databases analyzed (see Table 7).

Correlation between the entrepreneurial ecosystem and social entrepreneurial intention of young university students by gender

Sex	Purified base			Imputed base		
	Social entrepreneurship intention / University entrepreneurial ecosystem					
	Pearson correlation	Sig. (bilateral)	N	Pearson correlation	Sig. (bilateral)	N
Men	0.07	0.270	232	0.09	0.090	368
Women	0.171***	0.002	311	0.144***	0.001	488
	0.125***	0.003	543	0.119***	0.000	856

***. The correlation is significant at the 0.01 level (bilateral).

Note. Table constructed from the database of the questionnaire on Social Entrepreneurship and Leadership, collected in the framework of the research project "Social Leaders and Young University Students Transforming Realities. Explanatory analysis of their social entrepreneurial profile" to young university students of the University of Cuenca-Ecuador, period March-August 2019, n1=543 and n2=856.

Regarding the analysis of the relationship between the university entrepreneurial ecosystem and social entrepreneurial intention, according to faculties, it is found that not in all faculties the students' perception of their social entrepreneurial intention and the university entrepreneurial ecosystem have a statistically significant positive linear relationship. In other words, it means that in many faculties there is no evidence of a positive linear relationship between these two important variables related to social entrepreneurship (see Table 8), and even inverse associations are found, which should be analyzed in more detail in future research.

In the Faculty of Architecture, a statistically significant moderate positive relationship is found at 90 % in the first base and at 95 % in the second base $(\rho = 0.30, p < 0.10; \rho = 0.32; p < 0.05)$. Likewise, a weak linear relationship is found in the faculty of Economic Sciences $(\rho = 0.25, p < 0.05; \rho = 0.18, p < 0.10)$, significant at 95 % in the first base and at 90 % in the second. Similarly, a strong linear relationship is found in the faculty of Dentistry which is sta-

tistically significant at 95 % in the first base $(\rho = 0.80, p < 0.05)$ and a moderate linear relationship statistically significant at 90 % in the second base $(\rho = 0.40, p < 0.10)$ is found. Similarly, a statistically significant moderate linear relationship is found in the faculty of Chemical Sciences in the first base $(\rho = 0.33, p < 0.05)$ and a statistically significant weak linear relationship in the second base $(\rho = 0.23, p < 0.05)$.

A similar result is found in the Faculty of Arts, since there is no evidence of a statistically significant linear relationship in the first base, while a statistically significant moderate linear relationship is determined in the base with imputed data $(\rho = 0.37, p < 0.05)$. On the contrary, a statistically significant negative linear relationship at 95 % is found in the Psychology faculty in the first base $(\rho = -0.52, p < 0.05)$ and at 90 % in the second base $(\rho = -0.31, p < 0.10)$. This result is opposite to that indicated by the theory, which should be treated very carefully, since the significance level of this relationship decreases as the sample size increases.

Table 8

Correlation between the entrepreneurial ecosystem and social entrepreneurial intention of young university students, by faculty

Faculty	Purified base			Imputed base		
	Entrepreneurial intention / University entrepreneurial ecosystem					
	Pearson correlation	Sig. (bilateral)	N	Pearson correlation	Sig. (bilateral)	N
Architecture and Urban Planning	0.30*	0.096	31	0.32**	0.026	49
Arts	0.30	0.227	18	0.37**	0.033	33
Agricultural Sciences	0.19	0.201	45	0.17	0.201	57
Hospitality Sciences	-0.23	0.282	23	-0.11	0.492	45
Economic and Administrative Sciences	0.25**	0.046	64	0.18*	0.084	92
Medical Sciences	0.01	0.948	115	0.06	0.438	179
Chemical Sciences	0.33***	0.003	78	0.23***	0.010	123
Philosophy, Letters and Educational Sciences	0.16	0.260	51	0.14	0.136	111
Engineering	0.03	0.871	34	0.02	0.906	49
Jurisprudence and Political and Social Sciences	-0.07	0.659	46	-0.02	0.875	61
Dentistry	0.80***	0.001	13	0.40*	0.074	21
Psychology	-0.52***	0.008	25	-0.31*	0.066	36

***. Correlation is significant at the 0.01 level (bilateral); **. Correlation is significant at the 0.05 level (bilateral); *. Correlation is significant at the 0.10 level. (bilateral).

Note. Table constructed from the database of the questionnaire on Social Entrepreneurship and Leadership, collected in the framework of the research project "Social Leaders and Young University Students Transforming Realities. Explanatory analysis of their social entrepreneurial profile", to young university students of the University of Cuenca-Ecuador, period March-August 2019, n1=543 and n2=856.

Finally, in the faculties of Agricultural Sciences, Hospitality Sciences, Medical Sciences, Philosophy, Letters and Educational Sciences, Engineering and Jurisprudence, and Political Sciences, there is no evidence of a positive linear relationship between the social entrepreneurial intention of students and their perception of the entrepreneurial ecosystem forged in their faculty and at the university.

Conclusions and discussion

This research allows to confirm and demonstrate some fundamental aspects to consider for creating university educational policies that enable the development of competencies and the use

of business opportunities, which help to consolidate a robust social entrepreneurial culture for the youth of our country, as well as for the State.

The results of the analysis from a gender perspective show that women studying at the University of Cuenca have greater social entrepreneurial intentions and more perception of the university social entrepreneurial ecosystem than men; however, these differences are not statistically significant.

It is also evident that there are no statistically significant differences in the mean scores of the social entrepreneurial intention of students of the twelve faculties of the University of Cuenca; on the contrary, statistically significant differences are found between the mean scores of the social

entrepreneurial ecosystem by faculties, especially in the faculties of Dentistry, Arts and Psychology, where students perceive a greater generation of spaces (ecosystem) for social entrepreneurship; the opposite is observed in the perception of students of the Faculty of Philosophy, Letters and Educational Sciences.

The data agree with the results of the study conducted by Garavito *et al.* (2021), who consider university education as a key factor for developing competencies that influence entrepreneurial intention, especially among female students, who have entrepreneurial behaviors that contribute to their individual, social and collective empowerment. Significant differences in entrepreneurial intention by faculties are also observed. However, in the aforementioned study, greater entrepreneurial intention is observed in female students attached to the faculty of Economics and Administrative Sciences.

On the other hand, the study confirms the existence of a statistically positive linear relationship between the latent variable "university entrepreneurial ecosystem" and the "social entrepreneurial intention" of university students. The data are consistent with the research conducted by Mora *et al.* (2019) who point out that the appropriate university ecosystem reinforces and motivates the intention to social entrepreneurship.

Furthermore, from the analysis disaggregated by faculties, it is found that there is no evidence of a positive linear relationship between the university entrepreneurial ecosystem and the social entrepreneurial intention in the faculties of Agricultural Sciences, Hospitality Sciences, Medical Sciences, Jurisprudence and Political Sciences, Philosophy, Letters and Educational Sciences and Engineering, i.e., not in all faculties the perception of students on their social entrepreneurial intention and the university entrepreneurial ecosystem have a significant positive linear relationship that demonstrates the incidence of the entrepreneurial ecosystem in a greater social entrepreneurial intention. These data motivate new research to deepen in the factors generated by these results and that commit us to apply qualitative methodologies to deepen in the feelings and needs of the students.

In short, the above results are conclusive in demonstrating that the efforts to positively impact the entrepreneurial intention of students are different in each faculty, showing that some faculties promote a better entrepreneurial environment than others.

One of the lessons learned from this result is the need for an articulated strategic work between the representatives of each faculty and the central administration to achieve positive results in the intention of social entrepreneurship of students, in which a culture of entrepreneurship is promoted, which in addition to training professionals with technical skills is capable of generating collective entrepreneurship processes that have a significant impact on the development of the localities and the country, both in the economic and social spheres.

Support

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