

CHALLENGES FOR ENTREPRENEURSHIP TRAINING WITH A GENDER FOCUS IN COLOMBIA. CASE STUDY

Ligia Inés Melo Torres^{1*}, Laura Tatiana Ortiz Melo², Dora Esther Fonseca Pinto³

¹PhD in Projects. Master's Degree in Business Development, Specialist in Planning and Management of Territorial Development. Business Administrator Universidad Pedagógica y Tecnológica de Colombia. ORCID iD: <https://orcid.org/0000-0002-4994-776X>, Email: ligia.melo@uptc.edu.co

²Master's Degree in Marketing. Industrial Designer, Universidad Pedagógica y Tecnológica de Colombia (UPTC). ORCID iD: <https://orcid.org/0000-0003-2269-3736>, Email: lauratatiana.ortiz@uptc.edu.co

³PhD (c) Managerial Administration, Master's Degree in Economic and Financial Administration. Specialist in Planning and Management of Territorial Development Business Administrator Universidad Pedagógica y Tecnológica de Colombia. ORCID iD: <https://orcid.org/0000-0002-8361-2648>, Email: dora.fonseca@uptc.edu.co

Received: 17/08/2024

Accepted: 19/10/2024

Corresponding Author: Ligia Inés Melo Torres
(ligia.melo@uptc.edu.co)

ABSTRACT

Entrepreneurship is said to contribute to a country's development by generating employment, contributing to the GDP, and improving living standards. This is especially true for female entrepreneurs, who face significant challenges in training due to issues such as financing and gender disparity. This study examined and analyzed the challenges of entrepreneurship training from a gender perspective among undergraduate students at the Pedagogical and Technological University of Colombia in Sogamoso. The study used an exploratory and descriptive approach and surveyed 64 women and 39 men. The main findings did not show significant differences between women and men. However, they clarified the limitations that entrepreneurs perceive, as well as the actions that the university must undertake in terms of training, support, and a favorable climate. For example, the findings validated the creation of an entrepreneurship degree program.

KEYWORDS: Entrepreneurship, Entrepreneurial Environment, Gender Approach, Training, Challenges.

1. INTRODUCTION

In recent years, there has been a greater emphasis on understanding that gender equality is essential for a country's development (Barafani & Barral, 2020). Entrepreneurship is said to contribute to a country's development by generating employment, contributing to the GDP, and improving living standards. This is especially true for female entrepreneurship. However, the situation of women in Latin America and the Caribbean is permeated by global patterns of gender inequality, starting at the lowest levels of regional economic development. Although female labor participation has increased in recent years, it remains a challenge in the labor market, as do significant gender wage gaps in all occupations. Social stereotypes cause many women to perform unpaid work at home, hindering their access to new job opportunities and displacing them to low-quality jobs that limit their professional growth.

Female entrepreneurship is a topic arousing greater interest from governments, academics, and society in general because it is a surefire way to address important challenges facing humanity, such as inclusion, inequality, and gender stereotypes. In Latin America specifically, approximately three out of ten women do not have their own income. According to the Economic Commission for Latin America and the Caribbean (ECLAC, 2021), 118 million women work in the informal sector. This situation was exacerbated by the Covid-19 pandemic, which brought the female labor participation rate to 46% in 2021, further widening the inequality gap between men and women.

Additionally, women face regulatory and cultural biases, as well as limited access to capital, information, technology, and connectivity. These factors hinder their development as entrepreneurs and prevent them from reaping the benefits of foreign trade. According to the OECD report (2024), women face greater challenges than men. Women are less likely to be hired for jobs related to exports, with a 40% lower chance than men. Similarly, women managers face challenges related to financing, followed by a lack of understanding of foreign markets and internet access. Firms run by women tend to be smaller than those run by men, making them more vulnerable to administrative processes at the border (OECD, 2024).

According to Hincapié et al. (2023), a literature review on female entrepreneurship identified four categories that influence women's decisions to start a business: Socioeconomic, business, political, and psychological factors. Therefore, it is necessary to

pay special attention to these categories, from training and access to financing to policies and enabling environments that strengthen their competencies, skills, and motivations. This will allow them to face business processes in the best possible way and contribute to well-being and development not only for themselves, but also in much broader aspects and spaces.

2. THEORETICAL FRAMEWORK

Regarding entrepreneurship training, Acosta (2021) states that it involves collaborative and meaningful learning to develop competencies and achieve articulation between theoretical and practical learning. Similarly, Romero (2023) and Bedregal (2023) agree that this training should be oriented toward the needs of the student body and incorporated into academic activities in the classroom that develop the necessary entrepreneurial skills, as well as strategies that focus on entrepreneurial profiles. These strategies help students promote business ideas and entrepreneurial processes with initiative and motivation, which stimulates proper proposal and project structuring. Martinez and Ortega (2021) demonstrate the importance of universities promoting and venturing strategic, systematized, and rigorous plans that strengthen entrepreneurship education and reduce factors that demotivate individuals from creating their own businesses.

According to Avolio and Giovanna (2017), entrepreneurial activity requires individuals who can identify opportunities and are willing to take on more risks than others. Therefore, it is crucial to understand and analyze the motivations and stimuli that drive entrepreneurship. Traditionally, these motivations have been characterized by the vocation or economic need model. For their part, Encina and López (2021) and Reyes et al. (2019) argue that education directly influences entrepreneurial intention and future outcomes. The higher the educational level, the more likely a person is to start a business. Experience also plays a role in the nature of the company. Thus, there is a need for education and support programs for entrepreneurs so they can learn and gain experience while developing.

Considering what Deakins et al. (2016) said about Colombian entrepreneurs lacking the hard skills necessary for business success, such as strategic, tactical, and personal behaviors related to marketing, risk management, and financial control, which can be developed through communication or experience, it is essential to consider the previous professional experience of entrepreneurs when developing

business ideas. Additionally, Cusolito and Maloney (2021) state that entrepreneurs in developing economies lack the capacity to identify business opportunities based on technological advances and have little opportunity to create entrepreneurial teams with the necessary skills for success. The Conpes 4011 document also warns that capacities to identify new market opportunities or initiate innovative actions to exploit them are low. Therefore, when developing specific entrepreneurial skills, it is essential to consider entrepreneurs' previous professional experience when materializing new business ideas (Departamento Nacional de Planeación, 2020).

According to Encina and López (2021), limiting factors for women-led entrepreneurship include a lack of financial education, access to credit, networks, programs, and policies that support women entrepreneurs. This is significant because women's entrepreneurship is important for a nation's economic advancement and for containing disparities in access to economic opportunities. In addition to increasing women's financial independence, these businesses have the potential to encourage job creation and diversify the local economy (Saavedra et al., 2022; Escorcia et al., 2024). Meanwhile, Alvarado and Arévalo (2024) suggest that access to financing and training are essential for the success and sustainability of enterprises. Training in areas such as administration and finance could provide entrepreneurs with the skills necessary for making informed decisions and managing their resources efficiently.

Previous entrepreneurial experience, business age, formality, and size are factors that positively affect the probability of accessing financing, as well as the implementation of good financial organizational and management practices. According to Álvarez et al. (2021), only 40% of MSMEs in Latin America have accessed financing, while 76% of large companies have done so without difficulty. Among the main obstacles identified for financing women entrepreneurs are required guarantees and bureaucratic procedures. These obstacles impact enterprises' ability to obtain formal financing and sometimes force them to resort to informal financing. Although informal financing offers quick access, it implies high financial and social costs and limits businesses' growth potential (Innpulsa Colombia, 2024; Mejía et al., 2023).

3. METHODOLOGY

This exploratory and descriptive research aims to explore and understand the current perceptions and

knowledge of university students in Sogamoso, Boyacá, Colombia, regarding entrepreneurship training. Information was obtained through a documentary review, reports from 2024 related to entrepreneurship, and a survey administered via Google Forms in March 2024. A total of 103 students responded, including 64 women and 39 men. The information was analyzed separately, with 100% representation in each group, to observe the differences between women and men.

4. RESEARCH RESULTS

First, relevant information is presented in the Latin American context on gender disparity, Colombia's profile for financing for entrepreneurship and business development, policies and regulations for entrepreneurship in Colombia. Then, the results obtained through the survey applied to undergraduate students of the UPTC Sogamoso section are described.

4.1. Latin American and National Context of Relevant Aspects for Entrepreneurship in Colombia

For the year 2024, it is estimated that Colombia will have 52.7 million inhabitants, 51.2% of whom will be women and 48.8% of whom will be men. The department of Boyacá, where the UPTC is located, will have a population of 1.31 million, 50.6% of whom will be women and 49.4% of whom will be men. The multidimensional poverty index will affect 16.6% of the population, and long-term unemployment will affect 15.5%. Informal work will affect 78.5% (Gobernación de Boyacá, 2021). Regarding national labor informality by gender, the results of the General Integrated Household Survey (GEIH), carried out by the National Administrative Department of Statistics (DANE), show that in the first quarter of 2024, the informal workforce consisted of 7.6 million men and 4.9 million women, with informality rates of 58.1% and 53.7%, respectively (DANE, 2024).

4.2. Global Gender Disparity Index for South America 2024

According to the World Economic Forum's Global Gender Gap Index, which uses a scale from 0 to 1 where 1 indicates full gender parity, Colombia ranks 45th out of 146 countries and 10th out of 14 countries in Latin America. Colombia is below countries such as Nicaragua, Argentina, and Bolivia. Table 1 shows that the gap is most accentuated in political participation out of the four factors analyzed. The report warns that achieving parity in political

empowerment will take 169 years; parity in participation and economic opportunities, 152 years; and educational parity, 20 years. A specific deadline has not yet been determined to close the health and

survival gap. Thus, although progress has been made, there is still a long way to go to achieve gender equality (Foro Económico Mundial, 2024).

Table 1: Global Gender Disparity Index for South America 2024.

Country	Total		Participation Economic		Level Educational		Bless you Survival		Political Empowerment	
	Stand	index	stand	score	stand	score	stand	score	stand	score
Nicaragua	6	0,8110	100	0,642	32	1,000	34	0,978	5	0,626
Ecuador	16	0,7880	66	0,707	52	0,996	85	0,968	17	0,482
Costa Rica	19	0,7850	91	0,679	1	1,000	59	0,973	15	0,489
Chile	21	0,7810	92	0,662	88	0,990	68	0,970	12	0,502
Argentina	32	0,7720	97	0,651	1	1,000	41	0,977	20	0,459
Mexico	33	0,7680	109	0,612	62	0,994	49	0,975	14	0,490
Jamaica	37	0,7580	8	0,809	81	0,991	93	0,967	60	0,263
Peru	40	0,7550	77	0,686	86	0,990	117	0,964	33	0,380
Bolivia	44	0,7460	95	0,653	96	0,985	127	0,962	32	0,384
Colombia	45	0,7450	71	0,701	1	1,000	51	0,975	47	0,306
Brazil	70	0,7160	88	0,667	54	0,996	1	0,980	74	0,220

Source: World Economic Forum, 2024.

4.3. Colombia's Profile for Entrepreneurship Financing

According to the competitiveness index, Table 2 shows Colombia's average performance in terms of

financing for entrepreneurship. The index indicates the need for substantial improvements in domestic credit to the private sector, market capitalization, and the stock turnover index (Consejo Privado de Competitividad, 2024).

Table 2: Financing for Entrepreneurship Profile of Colombia.

Indicator	Value in Colombia	Latin America Post	Best country in Latin America	OECD Average - (value)	Fountain
Availability of financing for entrepreneurship (from 1 to 9)	3,2	6 of 10	Mexico (3.9)	4,71	Global Entrepreneurship Monitor (2024)
Domestic credit to the private sector (% of GDP)	42,5%	11 of 16	Chile (109.5%)	85,3%	World Bank (2024)
SME financing (1 to 7)	3,9	8 of 17	Panama (4.2)	3,9	WEF (2019)
Availability of venture capital (from 1 to 7)	3,2	5 of 17	Chile (3.8)	3,8	WEF (2019)
Better environment for financial inclusion	82	1 of 15	Peru (82)	-	The Economist (2020)
Bench strength (1 to 7)	5,8	7 of 17	Chile (6.4)	6	WEF (2019)
Market capitalization (% of GDP)	19,8%	6 of 8	Chile (94,4 %) (2022)	61,6%	World Bank (2024)
Share turnover rate (% of the value of domestic shares)	9,5%	4 of 8	Brazil (162,7%) (2022)	62,8%	World Bank (2024)

Source: Private Competitiveness Council, 2024.

Regarding financing, it was found that entities at various levels, from international to national, offer credit to women-led entrepreneurial ventures. We-Fi, a collaborative partnership between 14 governments, eight multilateral development banks (MDBs), and other public and private sector stakeholders, seeks to address the financial and non-financial constraints faced by women-owned or -led small and medium-sized enterprises (SMEs) in developing countries. The founding financial donors are: Australia, Canada, China, Denmark, Germany,

Japan, the Netherlands, Norway, the Russian Federation, the Republic of Korea, Saudi Arabia, the United Arab Emirates, and the United States. Similarly, the World Bank's Gender Strategy for 2024-2030 expresses the ambition to accelerate gender equality, end poverty, and promote a livable planet. The strategy prioritizes three objectives: ending gender-based violence, raising human capital, and expanding and facilitating economic opportunities and women's leadership (Banco Mundial, 2024).

At the national level, the Free and Productive

Women's Fund of the Vice-Presidency of the Republic is mentioned for the first time. It was created to promote financial inclusion as an essential pillar to strengthen the economic autonomy of women of all backgrounds. Its actions are framed within the guidelines of Conpes 4080, 4005, and 4129, as well as the National Development Plan for 2022–2026. Other entities include the Microenterprise Fund of Colombia, which aims to close gender gaps and promote financial inclusion and income generation for women. The Fund offers a new line of credit and special savings with terms ranging from three to 24 months, with differentiated rates for rural and urban areas (Fondo Mujer, 2024; Microempresas de Colombia, 2024).

The Foundation Pipelines is a non-profit, independent, and autonomous entity committed to fostering citizen participation, promoting alliances, and encouraging local development based on the fundamental principles of inclusion, relevance, and responsiveness. The foundation seeks to promote comprehensive and balanced participation. Similarly, various financial institutions now offer

lines of credit to women entrepreneurs. Examples include Bancolombia (2024), Banco Agrario (2024), Bancoldex (2024), Fundación de la Mujer (2024), and Davivienda (2024), among others.

4.4. Profile in Business Development of Colombia

In this regard, relevant aspects include the formation of University-Business-State Committees (CUEEs), which date back to the 2000s. Additionally, the Technical Committee on Entrepreneurship was created in July 2020 by the Executive Committee of the National System of Competitiveness and Innovation (SNCI) to promote the strengthening and consolidation of the entrepreneurial ecosystem, as well as to recommend solutions for overcoming obstacles and bottlenecks in policy implementation. Table 3 shows Colombia's business development profile. The critical factor is labor productivity per hour. Otherwise, Colombia has a favorable profile for entrepreneurs (Tenorio, 2017; Consejo Privado de Competitividad, 2024).

Table 3: Colombia's Profile in Business Development.

Theme	Indicator	Colombia - value	Latin America Rank	Best country in Latin America	OECD average (value)	Fountain
Productivity	Average productivity growth Total, of the factors (%)	0,1	5 of 13	Venezuela (8,2)	-0,8	The Conference Board (2023)
	Labor Productivity Per Hour Worked	23	6 of 13	Uruguay (39,2)	67	
Sophistication and diversification	Percentage of total exports 2023	3	5 of 17	Brazil (0,01)	0,02	Trade Map (2023)
	Economic Complexity Index	-0,1	5 of 17	Mexico (1,1)	1,07	Downtown Development International - Harvard (2021)
	Prospective Complexity Index	-0,05	7 of 17	Mexico (0,9)	0,6	
Competition and regulation	Ease of doing business (0 to 100)	70,1	3	Chile (72,6)	77,5	World Bank (2020)
	Administrative burdens for new businesses (0 to 6)	2,8	4 of 6	Mexico (0,7)	1,2	OECD (2019)
	The availability of financial resources for small and medium-sized companies (1-10)	3,18	7 of 10	Mexico (3,9)	4,7	Global Entrepreneurship Monitor (2023)
Entrepreneurship and business exit	Business Context Index (0-10)	4,1	4 of 9	Chile (4,6)	4,8	Global Entrepreneurship Monitor (2023)
	Early Business Activity Rate (TEA)*	23,6	6 of 8	Ecuador (32,7)	11,8	
	Insolvency resolution (0 to 100)	71,4	1 of 17	Colombia (71,4)	72,6	World Bank (2019)

*(% Of Population Aged 18-64, Nascent Entrepreneurs or Owners of a New Business Up To 3.5 Years Old).

Source: Private Competitiveness Council, 2024.

In this order of ideas, it is not only important to consider the current context, but also the projection for the future, where the scenario to the year 2054 contemplates the need to adopt an organizational model, with adaptation to technological, demographic and climate change that will undoubtedly affect the social and economic dynamics of the countries; where innovation and flexibility will be the engines of success to generate a favorable environment that promotes productive

business development. The CPC's foresight survey allows us to outline the ideal scenario for business development, highlighting that the productive units will be innovative, agile and productive so that they can adapt to the dynamics of the future (Private Council on Competitiveness, 2024).

4.5. Policies and Regulations for Entrepreneurship in Colombia

In this regard, laws, decrees and documents of the

National Council for Economic and Social Policy (Conpes) were found, presented in Table 4, where the key aspects of each one are described, noting that there are regulations alluding to women's

entrepreneurship exclusively; noticing goodness in number and content of the norms, which however lacks greater knowledge, approach and operability from the different instances.

Table 4: Regulations in Colombia Regarding Entrepreneurship.

Standards	Description of relevant aspects
Law 1014 of 2006	Promotion of the culture of entrepreneurship, establishes definitions, network for entrepreneurship and establishes compulsory training in educational institutions. (Congreso de la Republica de Colombia, 2006)
Law 2069 of 2020	Enacted to promote entrepreneurship in Colombia, it establishes a regulatory framework that promotes entrepreneurship and the growth, consolidation and sustainability of companies, in order to increase social welfare and generate equity. This framework outlines a regionalized approach according to the socioeconomic realities of each region. (Congreso de la Republica de Colombia, 2020)
Conpes 4011 of 2020	National entrepreneurship policy, whose objective is to generate enabling conditions in the entrepreneurial ecosystem for the creation, sustainability and growth of enterprises that contribute to the generation of income, wealth and increases in productivity and internationalization of the country's companies. Recognizing that the characteristics and needs of entrepreneurs are diverse, therefore, it proposes actions aimed at: 1. productive subsistence units, with conditions that allow them to overcome their state and generate income for their development and sustainability; 2. Inclusion businesses and microenterprises, with the promotion of value creation to enhance their growth and connection with the productive system; and 3. business initiatives aimed at generating wealth, creating proposals based on differentiation and innovation, to promote their high growth and internationalization. (Departamento Nacional de Planeación, 2020)
Law 2125 of 2021	It establishes incentives for the creation, formalization and strengthening of MSMEs led by women, it also contemplates strategies for the entrepreneurial development of students and apprentices through the Ministry of National Education and the National Learning Service SENA and in addition to providing technical support for the consolidation of early enterprises. (Congreso de la República de Colombia, 2021)
Decree 1079 of 2021	It regulates regulations and creates Regional Networks for Entrepreneurship, attached to the departmental governorships, or whoever takes their place, for the fulfillment of their purpose and functions, each RRE will work within the framework of the Regional Competitiveness Commission of the respective department. (Presidencia de la república de Colombia, 2022)
Decree 1860 of 2021	Establishing definitions related to entrepreneurship in Colombia. It defines female entrepreneurship or women's business by meeting the following requirements: more than 50% of the property rights of the legal entity belong to women; at least 50 per cent of the positions at the managerial level of the legal entity are held by women and these have been held continuously for at least the last year; the president or general manager is a woman and she has exercised this role uninterruptedly for at least the last year; that the natural person is a woman; and when the beneficiary is a women's organization and meets any of the following criteria: (a) Social base made up of between 51 and 82 per cent of adult women. b) The legal representative and/or president of the management body must be a woman. c) The management body of the producer organization must be composed of at least 60% women. d) The number of female associates represents at least 51%. (Presidencia de la República de Colombia, 2021)
Conpes 4080 of 2022	Public Policy on Gender Equity for Women: Towards the Sustainable Development of the Country. establishes the roadmap to 2030 for Colombia to be the international leader in SDGs: Gender Equality. From a perspective of women's capacities to live an autonomous and free life, with opportunities to fully develop, overcome obstacles related to their economic, decision-making and physical autonomy. . (Departamento nacional de Planeación, 2022)
Decree 761 of 2022	By which Law 2125 of 2021 is regulated, regarding the Certification Mark for the formalization and strengthening of micro, small and medium-sized enterprises led by women, as contained in Article 18 of Law 2125 of 2021. (Presidencia de la República de Colombia, 2022)
Law 2234 Sep 2022	By which the social entrepreneurship policy is promoted. Its purpose is to establish the guidelines for the construction of the Public Policy of Social Entrepreneurship, for the development of solutions to social, cultural and environmental problems, as an engine of transformation and innovation at the national and regional levels. (Congreso de la república de Colombia, 2022)

Source: Authors' Own Elaboration, 2024.

4.6. Results of the Survey Applied to Undergraduate Students at the Uptc Sogamoso Branch

4.6.1. General Characteristics of the Respondents

The UPTC is a public institution of higher education, it has four campuses and several regional centers, the headquarters that constitutes the present case study corresponds to the Sogamoso section department of Boyacá, which has eight

undergraduate programs, 3 of economic and administrative sciences, and five engineering. The survey was sent to around 2000 students, 103 students from 6 programs responded; Table 5 shows by age ranges, both women and men, the highest percentage is between 21 and 25 years old, in the same way the majority are single and a smaller percentage live in a common-law union; In terms of progress in their professional training, a high percentage is studying from fourth to sixth semester,

followed by seventh to ninth semester, in addition 73.4% of women and 48.7% of men combine their

studies with part-time work, mainly on weekends.

Table 5: General Characteristics of the Respondents.

Analysis aspect		Female n=64	Male n=39
Age Range	Years Range		
	15-20	34,4	28,2
	21-25	54,7	56,4
	26 - 30	10,9	15,4
Marital status	Bachelor	86	97,4
	Married	3,1	0
	Common-law marriage	10,9	2,6
Semester you are studying	First to third	23,4	15,4
	Fourth to sixth	31,3	46,2
	Seventh to Ninth	29,7	25,6
	10 and academic completion	15,6	12,9

Source: 2024 Survey

4.7. Expectations Regarding Entrepreneurship

According to the information in Table 6, the projection at the end of their studies, 37.5% of women and 46.2% of men want to own their own business,

which indicates that they have good prospects for entrepreneurship; in addition to the fact that 31.3% of women and 43.6% would like to start their business while studying.

Table 6: Expectations for Venturing into Entrepreneurship.

Analysis aspect		Female n=64	Male n=39
Projection to complete studies	Owner of my own company	37,5	46,2
	Teacher/Employee in academia	3,1	0
	Private sector employee	14,1	25,6
	Public Sector Employee	20,3	15,4
	Inheriting the family business	4,7	0
	Rest for a few years	0	2,6
	He doesn't know yet	20,3	10,3
He plans to start a business	While studying	31,3	43,6
	At the end of studies	26,5	25,6
	Within a short time after finishing undergraduate	7,8	7,7
	You still don't know	34,4	23,1

Source: 2024 Survey.

However, a significant proportion of women (20.3%) are still unclear about their job prospects, a figure that contrasts with 10.3% of men; Likewise, 34.4% of women have not yet defined whether they plan to start their business, or when they would do so, compared to 23.1% of men who are in the same circumstance. Regarding the sectors in which they would like to start their entrepreneurship (Table 7), it can be seen that both women and men are inclined towards the trade services sector (wholesale, retail,

export); crucial information to keep in mind in training, skills development, as well as remembering the difficulties of women to venture into the trade sector, especially when it comes to exports (OECD, 2024). Regarding the environment in which entrepreneurial ideas emerged, it is identified that men develop their ideas outside the academic and university environment, while in women their source of inspiration is within their family environment and close friends.

Table 7: Environments for Potential Ventures.

Analysis aspect		Female n=64	Male n=39
Sector in which you would like to start a business	Trade services (wholesale or retail, export)	43,8	46,6
	Advertising / Marketing / Design	15,6	7,7
	Tourism and leisure	7,8	10,2
	Financial services	4,7	10,2
	Advice and consulting	6,3	2,6
	Other services	15,6	7,7
Environment in which your idea of entrepreneurship has arisen	University environment and course	23,4	17,9
	Outside the university environment	31,3	59
	Family and friends	45,3	23,1

Source: 2024 Survey.

As stipulated in some regulations regarding the university's commitments to training, supporting, and creating environments conducive to entrepreneurship, the UPTC adopted the Research, Technological Development, Innovation, Creation, and Entrepreneurship Policy through Agreement 064 of 2022. Through Agreement 011 of 2023, the allocation of spaces for developing entrepreneurship projects was also regulated. An entrepreneurship unit has been established, and in 2023, teachers were trained through a selection process. Within the current academic reform, an entrepreneurship training chair has been established for all

undergraduate programs, and business fairs are regularly held with students, businesspeople, and external entities, such as the Mayor's Office of Sogamoso and the Chamber of Commerce, participating. Regarding students' perceptions and experiences of entrepreneurship in the university environment (Table 8), both women and men generally have positive perceptions, as the highest percentage of responses fall into the "usually" and "almost always" categories. However, aspects such as the university climate and programming activities that contribute to entrepreneurial training must be improved.

Table 8: Perception of the University Environment for Entrepreneurship.

Analysis aspects	Always		Almost always		Sometimes		Never	
	Women	Men	Women	Men	Women	Men	Women	Men
	%	%	%	%	%	%	%	%
The university environment motivates the development of business ideas	20,3	5,1	40,6	41	35,9	38,5	3,1	15,4
University climate is favorable for entrepreneurship	17,2	10,3	39,1	38,5	40,6	46,2	3,1	5,1
The University opens spaces to link us in entrepreneurial activities	39,1	17,9	35,9	35,9	23,4	41	1,6	5,1
The university programs activities (conferences) that contribute to training as an entrepreneur	12,5	17,9	39	41	40,6	38,5	7,8	2,6
The university holds fairs and events that support training as an entrepreneur	37,5	30,8	42,2	38,5	18,8	30,8	1,6	0

Source: 2024 Survey.

4.8. Aspects Considered Relevant to Entrepreneurship

According to the competencies, skills, motivations and experiences considered necessary for entrepreneurship, it was asked to rate according to their degree of importance on a scale of 1 to 5, where 5 represents the maximum importance and 1 the least importance. The results in Table 9 show that both women and men highly value social and environmental

responsibility, technological knowledge, creativity, innovation and financial knowledge as key elements for entrepreneurial success. In addition, attitudinal skills such as responsibility, self-discipline and perseverance are considered fundamental; although the differences in perception between genders are not high, women tend to give greater importance to problem solving and motivation to achieve, while men value decision-making capacity and analysis of the environment a little more.

Table 9: Degree of Importance of Relevant Aspects for Entrepreneurship.

Analysis aspects	Importance in %					
	Females n=64			Men n=39		
	5	4	3	5	4	3
Decision-making capacity	48,4	31,2	13	51,3	28,1	10,3
Self-instruction	37,5	37,5	16	53,8	38,5	0
Autonomy	37,5	35,9	20	46,2	35,9	12,8
Teamwork	53,1	29,7	9,4	53,8	23,1	12,8
Troubleshooting	60,9	25	9,4	51,3	33,3	7,7
Network	53,1	23,4	16	51,3	28,2	10,3
Ability to relate	56,3	25	14	64,1	20,5	7,7
Self-discipline	71,9	17,2	4,7	61,5	28,2	2,6
Perseverance	71,9	12,5	9,4	56,4	25,6	7,7
Motivation to achieve	57,8	26,6	11	48,7	33,3	7,7
Leadership	59,4	18,8	17	53,8	23,1	12,8
Responsibility	76,6	10,9	6,3	64,1	17,9	7,7
Financial Literacy	82,8	15,6	1,6	69,2	23,1	7,7
Analysis of the possible environment of the undertaking	70,3	23,4	6,3	71,8	17,9	10,3
Technological know-how	93,8	6,3	0	64,1	23,1	10,3
Social and environmental responsibility	100	0	0	82,1	17,9	0
Creativity and innovation	90,6	9,4	0	76,9	12,8	7,7

Source: 2024 Survey. (Note: What Corresponds to What Is Graded With 1 And 2 Is Not Presented, Given Its Low Assignment).

It should be noted that knowledge about sources of financing and support programs for entrepreneurship was also inquired about and with surprise it was found that only 34.4% of women and 28.2% of men have some knowledge about sources of financing, in the same way 17.2% of women and 12.8% of men have heard about support programs for entrepreneurship.

4.9. Actions Favorable to Entrepreneurship That Are Required at the University

In accordance with the aspects addressed by different authors throughout the document regarding the limiting factors for entrepreneurship, the results of Table 10 ratify it, since the first place is for financing, followed by a network of contacts, as well as the use of a second language.

Table 10: Limiting Aspects and Actions Favorable to Entrepreneurship Necessary in the UPTC.

Analysis aspect		Female n=64	Male n=39
Aspects that she considers limiting to starting a business	Financing	89,1	79,8
	Generate a well-structured project	31,3	38,5
	National regulations and policies	32,8	23,1
	Command of a second language	48,4	56,4
	Network of contacts related to entrepreneurship	67,2	71,8
Actions that the university should implement to support entrepreneurial ideas	Have a business advisory and consulting center	65,6	53,8
	Forming seedbeds that give rise to possible business ideas	48,1	41
	Validation of an entrepreneurship as a degree option	71,9	74,4
	Offer Extracurricular Courses on Entrepreneurship	65,6	48,7
	Create playful-recreational spaces for the development of enterprises	46,9	41
	Create seed capital funds to support students	45,3	48,7
	Have a team of teachers trained in entrepreneurship	35,9	43,6
	Have technological platforms that facilitate the entrepreneurial process	43,8	38,5
Agreements or agreements with capital funds to support students		48,1	38,5

Fountain: Own Elaboration of the 2024 Survey.

Regarding the actions to be implemented, the results show a high willingness among both women (90.6%) and men (79.5%) to receive specific information on entrepreneurship. This indicates a growing interest among students to develop or enhance their entrepreneurial skills, based on recognizing barriers such as a lack of financing and limited networking opportunities. The expected actions include validating entrepreneurship as an undergraduate study option, establishing a center dedicated to advising and consulting on business development, and providing extracurricular training on entrepreneurship. These findings reveal the need to strengthen entrepreneurial ecosystems through comprehensive training strategies with accessible resources and clear support structures.

5. CONCLUSIONS

The results reflect the interest of university students, both women and men, in developing entrepreneurial initiatives. They are willing to receive training and support that combines technical skills with personal

and social competencies. These competencies are always accompanied by self-discipline, creativity, leadership, and technological and financial knowledge. There is a need to strengthen institutional actions, such as creating advisory centers, seedbeds, and seed capital funds, as well as validating entrepreneurship as a degree option. This creates a strategic opportunity to consolidate a more solid and inclusive entrepreneurial ecosystem that is oriented toward the real needs of the student community and fosters a more equitable entrepreneurial environment. It is concluded that entrepreneurship training must have environments and support favorable to entrepreneurship, as well as knowledge of and application of available regulations. As seen in this research, no major differences were found between women and men within the UPTC, perhaps due to their educational level, as most of those who responded to the survey are in higher semesters. However, the external environment in which they will implement and bring their ventures to fruition cannot be ignored, for which true training and knowledge are required.

Acknowledgement

The author wishes to thank the Pedagogical and Technological University of Colombia (UPTC) for its support in the development of the project and the publication of this article.

REFERENCES

Alvarado Lopez, M., & Arévalo-Jaramillo, M. (2024). Participación de las mujeres en la economía de países en

- desarrollo. *Revista Económica*, 12(1), 67-76. doi.org/10.54753/rve.v12i1.1859
- Álvarez, F., López, O., & Toledo, M. (2021). Acceso al financiamiento de las Pymes. CAF. <https://scioteca.caf.com/handle/123456789/1752>
- Avolio, B., & Giovanna, D. (2017). Progreso y evolución de la inserción de la mujer en actividades productivas y empresariales en América del Sur. *Cepal*(122), 35-37. <https://hdl.handle.net/11362/42031>
- Banco Agrario. (2024). Crédito mujer microempresaria. <https://www.bancoagrario.gov.co/personas/microempresario/credito-mujer-microempresaria>
- Banco Mundial. (2024). iniciativa de financiamiento para mujeres emprendedoras . <https://www.bancomundial.org/es/programs/women-entrepreneurs/brief/women-entrepreneurs>
- Bancoldex. (2024). Crédito para mujeres empresarias. <https://www.bancoldex.com/es/soluciones-financieras/lineas-de-credito/linea-de-credito-mujeres-empresarias-mincit-2024>
- Bancolombia. (2024). Crédito para mujeres. <https://www.bancolombia.com/negocios/productos/financiacion/mujeres>
- Barafani, M., & Barral , Á. (2020). Género y Comercio. Una relación a distintas velocidades. BID. <https://publications.iadb.org>spanish>document>
- Bedregal, N. (2023). Training in innovation and entrepreneurship: A Design Thinking teaching experience. *Human Review*., 16(5), 1-19. doi:10.37819/revhuman.v16i5.1528
- Congreso de la Republica de Colombia. (2006). Ley 1014 de 2006. De fomento a la cultura del emprendimiento. Colombia. <https://minciencias.gov.co/sites/default/files/upload/reglamentacion/ley-1014-2006.pdf>
- Congreso de la Republica de Colombia. (2020). Ley 2069 de 2020. Por medio de la cual se impulsa en emprendimiento en Colombia. Colombia. <https://www.funcionpublica.gov.co/eva/gestornormativo/norma.php?i=160966>
- Congreso de la república de Colombia. (2022). Ley 2234. Por la cual se promueve la política de emprendimiento social. Colombia. <https://www.suin-juriscol.gov.co/viewDocument.asp?id=30044418>
- Congreso de la República de Colombnia. (2021). Ley 2125. Colombia. <https://www.funcionpublica.gov.co/eva/gestornormativo/norma.php?i=168050>
- Consejo Privado de Competitividad. (2024). Informe Nacional de competitividad. CPC. <https://compite.com.co/wp-content/uploads/INC-2024.pdf>
- Cusolito, A., & Maloney, W. (2021). Productivity Revisited: Shifting Paradigms in Analysis and Policy (English). World Bank Group, Washington, D.C. <http://documents.worldbank.org/curated/en/578861548876206044>
- DANE. (2024). Demografía y población en Colombia. Bogotá. <https://www.dane.gov.co/index.php/estadisticas-por-tema/demografia-y-poblacion/proyecciones-de-poblacion>
- DANE. (2024). Gran Encuesta Integrada de Hogares - GEIH. Bogotá. <https://microdatos.dane.gov.co/index.php/catalog/819>
- Davivienda. (2024). Pyme mujer. <https://www.pyemas.com.co/ideas-para-crecer/finanzas-para-pymes/pyme-mujer>
- Deakins, D., Bensemann, J., & Battisti, M. (2016). Entrepreneurial skill and regulation: evidence from primary sector rural entrepreneurs. *JournalInternational Journal of Entrepreneurial Behaviour and Research*, 22(2), 234- 259. doi:https://doi.org/10.1108/IJEBr-12-2014-0240
- Departamento acional de Planeación. (2022). Documento Conpes 4080. Política pública de equidad de género para las mujeres:hacia el desarrollo sostenible del país. Colombia. <https://colaboracion.dnp.gov.co/cdt/Conpes/Econ%C3%B3micos/4080.pdf>
- Departamento Nacional de Planeación. (2020). Documento Conpes 4011. Política Nacional de emprendimiento. Colombia . <https://colaboracion.dnp.gov.co/CDT/Conpes/Econ%C3%B3micos/4011.pdf>
- Encina, L., & López, G. (2021). Emprendedurismo Femenino: Un estudio multi-caso de factores que influyen en la Intención Emprendedora. *Ciencia Latina*, 5(2), 1642. https://doi.org/10.37811/cl_rcm.v5i2.374
- Escorcia Caballero, J., Schmutzler , J., López Lambrano, M., Pereira Laverde, F., Osorio Tinoco, F., & Martínez Romero , A. (2024). Dinamica de la actividad empresarial en Colombia 2023- 2024. Enfrentando Desafíos. Ediciones de la U. <https://gemconsortium.org/report/reporte-gem-colombia-2023-2024>
- Fondo Mujer. (2024). Fondo mujer Libre y productiva. <https://fondomujer.gov.co/inclusion-financiera/>
- Foro Económico Mundial. (2024). Global Gender Gap Report 2024. WEF. <https://www.weforum.org/publications/global-gender-gap-report-2024/>
- Fundación de la mujer. (2024). Crédito para microempresarias. <https://portales.fundaciondelamujer>

- com/creditos/page-microcredito-para-microempresas
- Fundación Oleoductos. (2024). grupos de interés. [https://www.fodc.org.co/Gobernación de Boyacá. \(2021\). Marco territorial contra la pobreza extrema. https://www.boyaca.gov.co/marco-territorial-de-lucha-contra-la-pobreza-extrema/](https://www.fodc.org.co/Gobernación de Boyacá. (2021). Marco territorial contra la pobreza extrema. https://www.boyaca.gov.co/marco-territorial-de-lucha-contra-la-pobreza-extrema/)
- Hincapié, F., Montoya, A., & Duque, P. (2023). Emprendimiento femenino en América Latina: una aproximación teórica. *Economicas CUC*, 44(2), 191- 234. <https://doi.org/10.17981/econcuc.44.2.2023.Org.3>
- Innpulsa colombia. (2024). Brechas de género en financiamiento. Ministerio de Industria y Comercio . <https://www.innpulsa.com.co/wp-content/uploads/2024/11/BRECHAS-DE-GENERO-EN-FINANCIAMIENTO.pdf>
- Martínez, J., & Ortega, L. (2021). Modelos Educativos que impulsan el emprendimiento en las instituciones de educación superior. *Tectzopic*, 7(3), 32-40. doi:<https://doi.org/10.51896/TECTZAPIC/PMWZ1743>
- Mejía, O., Barba, R., Casquete, N., & Martillo, Í. (2023). Estrategias financieras informales que afectan la sustentabilidad del emprendimiento en las madres solteras de Guayaquil. *Encuentros*, 18, 79 - 95. doi:<https://doi.org/10.5281/zenodo.7901590>
- Microempresas de Colombia. (2024). crédito para mujeres. <https://microempresas.co/portafolio-integral/credito/credito-para-mujeres/>
- OCDE. (2024). Estudios sobre comercio y género en América Latina. *ocde*. https://www.oecd.org/es/publications/2025/06/trade-and-gender-review-of-latin-america_ae5d5c28.html
- Presidencia de la República de Colombia. (2021). Decreto 1860. Colombia. https://www.funcionpublica.gov.co/eva/gestornormativo/norma_pdf.php?i=175187
- Presidencia de la República de Colombia. (2022). Decreto 1079. Colombia. https://www.funcionpublica.gov.co/eva/gestornormativo/norma_pdf.php?i=170646
- Presidencia de la República de Colombia. (2022). Decreto 761. Colombia. <https://www.funcionpublica.gov.co/eva/gestornormativo/norma.php?i=186761>
- Reyes-Cruz, J., Sánchez-Trujillo, M., & Mejía-Ramírez, R. (2019). Influencia de la formación universitaria en las actitudes emprendedoras. *CEA*, 5(10), 117-133. doi: <https://doi.org/10.22430/24223182.1240>
- Romero, C. (2023). Necesidades de orientación profesional para desarrollar el emprendimiento en la universidad. *REOP - Revista Española de Orientación y Psicopedagogía*, 34(3), 145- 161. <https://doi.org/10.5944/reop.vol.34.num.3.2023.38897>
- Saavedra García, M. L., Briseño Aguirre, N. d., & Velázquez Rojas, K. G. (2022). Análisis y Evolución del Emprendimiento Femenino en Latinoamérica. *Femenino en Latinoamérica*, 11(32), 1- 28. <https://doi.org/10.36677/recai.v11i32.19391>
- Tenorio, E. (2017). Descripción de los Comités universidad - empresa- estado en Colombia. trabajo de pregrado, Universidad del Valle, Cali. <https://bibliotecadigital.univalle.edu.co/server/api/core/bitstreams/53693b3a-895f-49ee-96e0-6adfa05a6b1a/content>